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COMPLIMENTS

OF THE

SECTION ON GYNECOLOGY

OF THE

COLLEGE OF PHYSICIANS

OF

PHILADELPHIA

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1901

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TRANSACTIONS

OF THE

SECTION ON GYNECOLOGY

OF THE

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, January 17, 1901.

JOHN C. DA COSTA, M.D., *Chairman.*

DR. CHARLES P. NOBLE read a paper on

CANCER OF THE CERVIX AND PELVIS FOLLOWING SUPRAVAGINAL HYSTERECTOMY.

One of the arguments used in favor of total hysterectomy as against supravaginal hysterectomy for fibroid tumors of the uterus or for extensive inflammatory disease of the uterus and appendages, is that in a definite percentage of cases the cervix, if left in the pelvis, subsequently becomes the seat of carcinoma. A few cases of this kind have been reported, and these are always referred to in papers written from this standpoint, so that it is made to appear that there is considerable risk of cancer if supravaginal hysterectomy is employed instead of total hysterectomy. My own experience, which embraces more than one hundred and seventy-five supravaginal hysterectomies for fibroid tumors, and a larger number for inflammatory disease of the appendages, has not borne out this contention, but, on the contrary, indicates that cancer following supravaginal hysterectomy is of extremely rare occurrence.

March 7, 1895, the following case was operated upon in my service at the Kensington Hospital for Women: Mrs. D., age 35, married, has had three children and one miscarriage. She has suffered from menorrhagia of long standing, and has had numerous attacks of pelvic peritonitis. Abdominal section disclosed a fibroid tumor of the uterus the size of a cocoanut, a left ovarian cyst, and a right hydrosalpinx. These structures were densely adherent in the pelvis, and the tumors were edematous and infiltrated with inflammatory products. Supravaginal hysterectomy was performed, removing the tumor and appendages, the fibroid tumor, and the corpus uteri. The atypical condition of the tumors was noted, but it was attributed to the repeated attacks of peritonitis from which the patient had suffered. Mrs. D. made a fairly good recovery and was discharged from the hospital April 7.

Unfortunately no detailed study of the specimens was made, and no microscopic sections were examined.

Four months after the operation the patient began to bleed irregularly from the vagina. Eight months after the operation Dr. H. E. Applebach made a pelvic examination and found that the pelvis, vagina, and cervix were involved in an extensive cancer. The patient died a few months later, about one year after the operation.

As the specimens from this case were not examined, it is impossible to say definitely where was the primary seat of the cancer; but, in view of the history both before and after operation, there is good reason to believe that a carcinoma of the body of the uterus existed as a complication of the fibroid tumor at the time of the operation, and that this disease had already involved the broad ligaments when the hysterectomy was performed.

This case is reported not so much because of its value in itself as because of the negative value of my own experience with reference to the appearance of cancer in the cervix left after supravaginal hysterectomy. This is the only one which I have met, and in this there is every reason to believe that an unrecognized cancer existed at the time of operation.

Dr. George Erety Shoemaker read a paper on

I. OVARIAN CYST AND SUPPURATING HEMATOCELE,
II. SALPINGITIS WITH OBSCURE LOCALIZING SYMPTOMS.

Case I.—D., married, age 48, eight children; no miscarriages. Patient of Dr. S. A. Fries. She had been tapped

seven weeks before coming under observation, when ten quarts of thin, chocolate-colored fluid had been removed, disclosing a remaining mass in the upper abdomen. The abdomen had rapidly become again distended, and now contained, on her admission to the Presbyterian Hospital, a large cystic tumor, which was somewhat irregular on its upper surface, and presented many of the characteristics of an ovarian cyst, except that a possible origin in the upper abdomen could not be disproved. Eighteen months before, when the last child was born, no tumor was felt. The patient was very stout, was jaundiced, had a very irritable stomach, while a trace of albumin and a few hyaline casts appeared in the urine.

At operation the tumor was found to be a cyst of the left ovary and was removed. The ovary of the opposite side contained a small hematogenous cyst, and was removed with a hydrosalpinx of the same side. The semi-solid contents of chocolate-colored fluid measured about ten quarts. Adhesions were marked over the anterior surface of the tumor, probably owing to the tapping. There were strong adhesions to the transverse and descending colon, and considerable stripping of the peritoneal covering of the bowel occurred on the left side. Some uncertainty was felt as to the complete control of hemorrhage from an area in the mesocolon near the sigmoid flexure. There was some tendency to subperitoneal bleeding, but, not appearing to be persistent or definite, after some hesitation irrigation with hot salt solution was used and the abdomen closed. There was much fat deposit behind the peritoneum and about the large intestine, the patient being somewhat obese. She recovered slowly, after much vomiting for the first day or two—a symptom to which she had been subject for some time. The patient was most unruly and difficult to manage. The slight jaundice persisted.

About a week after operation, pelvic examination being made, there was found, distending the tissues around and between the rectum and the vagina and on both sides of the uterus, a more or less indurated mass. This became quite hard, but about four weeks after operation it gradually softened and obscure fluctuation was obtained immediately behind the cervix, the temperature being at this time irregular, with some sweating and a feeling of rectal pressure. Diagnosis was made of pelvic hematocele which was undergoing suppuration. The source of blood was thought to have been the vessels in the mesocolon and in the neighborhood of the sigmoid, which had

been injured in the separation of strong adhesions in those regions. Incision immediately behind the cervix gave exit to several ounces of bloody pus with small black clots. The cavity from which this came was shallow, very irregular in outline, and appeared to contain shreds of blood clot which had not yet broken down. Drainage tube was inserted and light iodoform gauze packed in the vagina. Under careful irrigation the discharge rapidly diminished, the patient's temperature becoming normal and so remaining. Complete recovery followed. This collection of blood must have been subperitoneal, as it surrounded and more or less fixed the rectum. After it had become consolidated the pressure on the rectum was the source of great distress to the patient, who complained rather of pressure than of pain. She had a great deal of difficulty in having a stool, owing to the presence of this induration. The vaginal incision was made about five weeks after the laparatomy. The jaundice disappeared about the eighth week. She was discharged in good condition.

CASE II.—H. H., 25, single, colored. Admitted to ward in Presbyterian Hospital with a history as follows: Previous health robust; menstruation normal. In August, 1900, three months before admission, had an attack of acute abdominal inflammation, characterized by vomiting, pain in the right abdomen opposite the navel, slight jaundice, irregular temperature reaching 103°. Slowly recovered, but since had more or less distress in the right lower abdomen, referred to the region of the appendix. This distress increased by lifting and working.

Two days before admission to the hospital, patient while menstruating had gotten her feet wet washing a pavement. The following day had chilliness, great pain all over the abdomen, vomiting, constipation, and elevated temperature. She was admitted to the surgical ward with a supposed diagnosis of appendicitis.

I was asked to see her in consultation with the surgeon on duty, for diagnosis. When seen by the writer she had been ill five days. The tongue was coated a dirty white, somewhat dry; while vomiting had been severe, it had ceased; there was slight jaundice, the face anxious. The greatest pain complained of was in the region of the gall bladder and epigastrium; tenderness, however, was most marked on both sides just above Poupart's ligament. Muscular rigidity, while not marked, was present in the left lower abdominal quadrant;

tenderness extended up over the region of the appendix. The tenderness being too great for a pelvic examination, ether was given for diagnosis, with the result that nothing could be felt in the upper abdomen and no mass in the region of the appendix. In Douglas' cul-de-sac were felt prolapsed coils of intestine, which when displaced gave the sensation of easily parted, very slight adhesions. Both tubes and ovaries slightly enlarged and fixed; the uterus was restricted in mobility and forward. Diagnosis of acute salpingitis was made, with the reservation of the possibility of a coincident involvement of the appendix. On this diagnosis the patient was transferred to the gynecological department under my care. As the attack was now five days old and the temperature range was improving; as vomiting had ceased, and the pulse was of good quality, ranging below 90, expectant treatment was continued and ice ordered for the lower abdomen.

During the next week the point of greatest tenderness varied from the epigastrium to McBurney's point and across the whole lower abdomen. At times palpation of the epigastrium was impossible. Muscular rigidity, however, disappeared in the lower abdomen, and the general condition gradually assumed normal, except for a slight pelvic tenderness.

Patient was confined to bed and the attack allowed to subside, and three weeks after the onset abdominal section was performed. Owing to the slight jaundice, the persistent high location of pain and tenderness, the rather high situation of the inflammation, it was supposed that the appendix would be found involved with the tubes. The incision was therefore made one inch to the right of the median line and through the right rectus muscle. The inflammatory disease was found to involve chiefly the uterine adnexa. The appendix dipped down into the pelvis, however, and was adherent by its tip to the enlarged right ovary, but its walls were not inflamed and there were no adhesions throughout its continuity. It was therefore not removed. There was capillary congestion and a roughening of the peritoneum over several coils of small intestine in the lower abdomen. The omentum was slightly adherent to the anterior pelvic brim. Both tubes and ovaries were buried in dense adhesions. The right tube was contorted and the uterine extremity normal for about an inch. The fimbriated extremity was completely destroyed by inflammation. Two pockets of inflammatory material occupied the lumen of the tube, the outer one containing yellowish pus in

flakes, the inner one swollen rugæ covered with flakes of inflammatory lymph. The right ovary, which was buried with the tube and under the inflammatory exudate, contained a cyst one and a half inches in diameter. Its contents were thin, bloody fluid. Tube and ovary were with some difficulty freed, tied off, and removed.

The left ovary, when freed from adhesions, was found to be nearly normal in size. The left tube was infiltrated and three-quarters of an inch in diameter. After separation from its bed of adhesions, bloody semi-purulent material could be squeezed from its outer opening; there was free oozing from the fimbriæ and from adhesions even after irrigation and sponge pressure. The leaving of the tube was considered unsafe on account of the free oozing and danger of infection from tubal contents. It was therefore removed with a portion of the corresponding ovary, the remaining portion of the ovary being left with the hope of maintenance of some function. Irrigation with salt solution, careful peritoneal toilet, and closure of the wound by through-and-through silkworm-gut sutures and catgut to the aponeurosis.

Slow but satisfactory recovery.

Dr. Charles P. Noble.—I remember well a patient admitted to the hospital with what was evidently an attack of appendicitis, but accompanied by a severe bronchitis. She had been twice operated upon before, and in each instance had taken the anesthetic badly. So, with the bronchitis as a complication, it was thought best not to interfere. She apparently did well for a while, but suddenly there was found an enormous abscess which the symptoms did not indicate the presence of. Upon examination it was found that this abscess filled the pelvis and extended into the abdominal cavity. The patient's bronchitis being no better, it was determined, under these circumstances, to employ chloroform as an anesthetic and to drain the abscess through the vagina. Some weeks later the abdomen was opened and the diseased appendix was removed. The entire pelvis was full of pus, which extended to the appendix region.

I remember, also, one case in which the patient had been treated for salpingitis by an able medical man. The patient had three recurrent attacks in his hands. In her fourth attack I was called in consultation. Three physicians agreed that the patient had salpingitis, and I operated. The case was one in which the appendix was in the pelvis. The appendix was inflamed and agglutinated to the tube. In a mass of exudate were the appendix, the ovary, and tube. Under these circumstances it was impossible to make a correct diagnosis; the exudate was in the pelvis in the location where the exudate would

be if the disease were salpingitis. In the appendicular region the parts felt normal on palpation. Under these circumstances it was impossible to make a diagnosis. In the case referred to by Dr. Shoemaker, where the tubes were thickened and could be definitely made out, the diagnosis was much more simple.

DR. MONTGOMERY.—I was unfortunate in not hearing all of Dr. Shoemaker's paper. The second part of it demonstrates the difficulty in determining the diagnosis of the cause of pelvic inflammation in women. Naturally, we most frequently attribute it to tubal disease; but a number of cases in my experience have demonstrated that even disease of the tubes and ovaries, particularly of the right side, may have been the result of infection from a diseased appendix. A case came under my observation at the Jefferson Hospital in which the indications of the good character of the girl precluded the probability of the pelvic inflammation having originated from the genital tract. An operation disclosed the pelvis full of pus, with involvement of the right ovary and tube, which had developed from a sloughing appendix.

The recent observation of a large quantity of pus in the pelvis of a man, with a localized accumulation upon the left side which had developed during a third attack of peritonitis, demonstrates how easily a similar condition might occur in the woman. The rupture of an ovum, and the congestion of the pelvic viscera incident to menstruation, would afford a favorable soil for the infection.

DR. BEYEA.—The described theory of the formation of a hematocele is that a slow but continued hemorrhage takes place into the peritoneal pelvic cavity, as a rule from the Fallopian tube and in tubal abortion, and collects in Douglas' cul-de-sac, forming a retrouterine hematocele. With this there may be an anteuterine hematocele, or the hematocele is formed about the tube—peritubal hematocele. Of course there may be a diffuse hematocele. The hematocele is composed of laminated blood clot, sometimes undergoing liquefaction, and the tumor is surrounded by fibrin adhesions to intestines and other structures. It would seem to me that in this case of Dr. Shoemaker's, since he noted at the operation that the hemorrhage collected beneath the peritoneum, and this or subsequent hemorrhage formed a retroperitoneal tumor, the condition was a hematoma and not a hematocele, and it resulted from injury to the retroperitoneal blood vessels.

DR. G. E. SHOEMAKER.—In regard to the postoperative hemorrhage, I thought it was subperitoneal for the reason that the location of the induration was strongly contrasted with that of collections in Douglas' pouch which I had recently had occasion to open. In Douglas' pouch in those cases there was a round, symmetrical mass. In one case of pelvic abscess from tube leakage the mass was as large as a child's head, pointing in the vagina behind the cervix, obliterating the vagina by pressure from behind, but not involving the sides of the uterus, vagina, or rectum, as in the case reported to-

night. In two other cases which I had opened recently through the vagina there was found the same definite location of the collection in the median line, as the collection was within the peritoneal cavity. Subperitoneal hemorrhage is quite possible, and we sometimes see it in operations from above where the vessel wounded is low down, particularly in extrauterine pregnancy. I have seen the whole floor of the pelvis filled with blood under the peritoneum when operating through the abdomen, and there was a great deal of difficulty in controlling the hemorrhage.

My second case was not reported as one of pelvic abscess due to appendicitis, but as a case of salpingitis with a few early symptoms of appendicitis, probably reflex. For several years I have been in the habit of examining the appendix when the abdomen was open for other causes, and in ten per cent of all cases of abdominal section I have removed the appendix also. I read a paper nearly five years ago advocating this procedure.

The differential diagnosis can usually be made between appendicitis and salpingitis by the menstrual history being abnormal in the case of salpingitis; by the bimanual examination demonstrating the normal condition of the tubes; by the lower situation of the inflammatory mass in case it is tubal—this is particularly demonstrable through the rectum; by the characteristic history of appendicitis, the short onset without the causes which would tend to produce salpingitis. The sharp onset of localized pain and muscular rigidity may be present in both conditions, but more markedly in appendicitis. Vomiting is not as common in salpingitis as it is in the intestinal lesion; while the pain is more often referred to the epigastrium or navel in appendicitis than it is in salpingitis. In the case reported the high location of the pain and tenderness at first made the diagnosis more difficult.

DR. E. E. MONTGOMERY read a paper on

TREATMENT OF PROLAPSUS UTERI.

In order to discuss the subject intelligently it is necessary to briefly consider the causes of the displacement. The causes of prolapsus uteri may be divided into three classes: (1) those which produce decreased support; (2) increased weight of the uterus; and (3) increased abdominal pressure. Either one or all of these classes may lead to the development of the displacement. Decreased support generally results from a lesion of labor, and may be a more or less extensive laceration of the pelvic floor. In this lesion the perceptible laceration may have been very slight, while the tissues have been pushed off from their attachments, leaving a sagging of both the anterior and posterior vaginal walls, or submucous lacerations of the tissues may have occurred without any break in the external layer.

The vagina may have been torn off from its lateral supports and hang only by its attachment to the cervix, dragging upon the uterus rather than taking any part in its maintenance. The increased weight of the uterus arises from subinvolution, from growths in the uterine walls, and from chronic inflammation of the organ. It is almost always associated with the lesions which have produced decreased support. In patients who suffer from such conditions, the discomfort in taking exercise results in increased deposit of fat in the omentum and mesentery. This increase of adipose tissue causes an increased intra-abdominal pressure. The increased pressure may also be aggravated by abdominal growths.

From time immemorial various procedures, mechanical and otherwise. have been instituted for the purpose of pinning up or maintaining the uterus in its normal position. We will not take your time for the discussion of the various mechanical devices that have been advocated. The earlier surgical operations consisted in attempts to narrow the vaginal outlet and most frequently were operations upon the perineum. Such operations were of but little value, as the still heavy uterus rested upon the newly united tissues, to be in a short time again driven through.

The plastic operations upon the anterior wall of the vagina afforded some advantage, however, but, as they were mostly denudations of the mucous surface, the cicatricial bands and bridles thus produced were not very resisting. Any operative procedure to be successful must aim to overcome the causes which we have named as productive of the displacement. For such purpose amputation of the cervix, with plastic operations upon the anterior and posterior vaginal walls, has been practised. These operations decreased the weight of the uterus and narrowed the outlet, but, as performed, they did not obviate the difficulty which arose from the vagina having been pushed away from its fibrous attachments, which permitted it to be driven through the narrowed canal by the intra-abdominal pressure. In slight displacements the retraction of the anterior vaginal wall, which is accomplished by an incision through the vaginal portion of the septum; the separation of the vagina from the bladder; where necessary, the tucking-up of the latter by buried sutures; the excision of a section of the vaginal wall, and the union of the incision by sutures so placed as to lengthen the anterior vaginal wall and throw the cervix well backward, will tilt the fundus forward. The procedure is

completed by a posterior colporrhaphy, in which the posterior vaginal wall is cut through, the incision extending from one lateral caruncula myrtiformis around the vaginal margin to that upon the opposite side; then by blunt dissection the vaginal wall is separated to a point at the level of the summit of the prolapsed wall, this dissection extended laterally to a line drawn from each external caruncle. The intervening wall, when cut away with scissors, forms a triangular denudation which lays bare the edges of the levator ani muscle. The surfaces are united by a continuous chromicized catgut suture which begins at the upper angle. The suture is carried first downward, and then upward upon the opposite side, so that each suture lifts up a segment of the denuded surfaces. In this way the parts are united, the vaginal wall retracted, and the edges of the levator ani muscle crowded forward over the front of the rectum. This procedure brings the inferior segment of the pelvic floor in contact with the newly constructed anterior, and affords a support to maintain the uterus in an anteverted position. Where there has been a prolapsus of the uterus beyond the first degree, such an operation should be supplemented by ventrosuspension of the uterus. If the prolapsus has been very marked there should not only be ventrosuspension, but a shortening of the utero-sacral ligaments, in order that the cervix shall be held up, otherwise the uterus will drag upon its anchor from the abdominal wall, produce an elongation of the band, and cause very considerable discomfort. Where there has been a marked tendency to hernia of the intestines with the prolapsus, it is advisable not only to do the operation of shortening the utero-sacral ligaments, but also to obliterate Douglas' pouch by the union of the peritoneal surfaces and thus reconstruct a pelvic diaphragm at a higher level. Neglect of this procedure will in some cases result in a hernia through Douglas' pouch, even though the uterus may have been amputated and the cervix anchored to the abdominal wall. In women who are quite fleshy, with fat abdominal walls, the incision for the maintenance of the uterus in position is objectionable. In cases of vagino-uterine prolapse with very marked thickening of the vaginal walls, with elongation of the cervix, ventrosuspension is not effective, for the reason that the uterine neck has been very much elongated. Occasionally, also, patients suffer from gravity sores upon the cervix, with thickening of the vaginal walls, which renders the retention of the uterus difficult and undesirable. In such cases

I have considered the sacrifice of the uterus, especially where the operation comes after the climacteric, as the preferable procedure. In removing the organ the fundus should be turned downward through the anterior fornix, the upper part of each broad ligament crushed with the angiotribe and ligated with catgut, in the groove thus formed, the uterus removed, and the uterine arteries ligated. A chromicized catgut suture should then be passed through each broad ligament and its ends carried through the lateral vaginal walls, so that when tied it lifts up each side of the vagina and insures against its subsequent prolapse. The peritoneal surfaces may be united to shut off the abdominal cavity. When a tendency to prolapse of the bladder exists, a section of the anterior vaginal wall is cut out, exposing the vesical wall, and the edges of the denudation are united by a continuous chromicized catgut suture, and the operation completed by the denudation already suggested upon the posterior vaginal wall. The vagina is held up by a loose packing with iodoform gauze. Such a procedure removes a uterus which from its alterations necessarily remains large, obviates the necessity for an abdominal incision, and effectually guards against subsequent vaginal hernia.

Dr. Charles P. Noble.—The principles laid down in the paper just read are so sound that there is left nothing but to agree with the propositions. The methods of operating differ in detail from those I have been in the habit of using. Before taking up the operation I might say a few words about the causes of procidentia. The general causes have been broadly referred to by Dr. Montgomery and are undoubtedly those which bring about procidentia. The three sets of causes are very important and have a great deal to do with the proper form of treatment to be applied, and, in the brief paper, Dr. Montgomery did not work out the questions. The great cause of procidentia is undoubtedly laceration or overstretching of the pelvic floor; where the pelvic floor is intact procidentia is of rare occurrence. I have seen myself but few cases of procidentia caused by increase of weight of the uterus; in one or two cases fibroid tumors have pushed the cervix down. One case occurred in a single girl, where the procidentia was caused by hard work; she habitually carried heavy bundles of carpet, and the strain forced out the uterus. The one great cause of laceration is, of course, childbirth. In practically all cases of procidentia in which the cervix descends nearly to, or to, the vulva, the cause is laceration.

In several steps in the technique of the operation for the cure of procidentia I am heartily in accord with Dr. Montgomery. Resection of the anterior vaginal wall is much superior to anterior colporrhaphy, because much firmer union is secured.

The point made by Dr. Montgomery in regard to the anterior vaginal wall being left long is of great importance. The only exception I believe to be in cases of old women who have cystocele rather than true procidentia. In such cases the anterior vaginal wall is greatly lengthened, so that if the uterus does not come down we have a chance to shorten it to the normal by performing the Stoltz operation, which shortens as well as narrows the anterior vaginal wall. In all other cases Stoltz's operation is to be condemned, because it drags the cervix forward and promotes the occurrence of retroversion. I also believe that it is a very important matter to amputate the cervix as the first step in the operation.

The operation that I employ upon the posterior vaginal wall is different from the one described by the essayist. If we are to get permanent results the principle should be followed of suturing the loose tissues of the posterior vaginal wall to the levator ani muscles, which are *fixed* by their points of origin on the pelvic bones. The principles underlying the Emmet operation best accomplish this. The modification of the Emmet operation which I have published is still better adapted to the restoration of the pelvic floor in procidentia cases.

I have seen Sänger, of Leipzig, operate as described his evening, and his results are said to be very permanent. On the other hand, if you use the Emmet operation I think it is much better, as one can use a fixed point to which to stitch the loose tissues of the rectocele. The levator ani muscle is always fixed through its attachment to the pelvic bones. Using this as a fixed point, the results obtained are much better than when the median operation is performed. It is my habit also to do a fixation of the uterus in all the cases of more than the slightest degree of procidentia, and I think that it is a valuable point in the technique. What is brought about is an anteverted uterus, which prevents the intra-abdominal pressure from falling upon the fundus of the uterus. In young women we must do a *suspension* rather than a *fixation*, because if the former were done we might have trouble in case of labor. In some cases of extensive procidentia the round-ligament operation offers better results for the same reason—*i.e.*, it obviates trouble during labor. I have recently been working out the statistics of procidentia, and I find that I have done the Alexander operation in 7 cases of procidentia, instead of suspension. As to the permanency, the combination of resection of the perineum and suspension of the uterus gives gratifying results. Out of 125 operations by that method there have been but two instances of recurrence. Permanency of results is all that could be wished for.

The last point which was brought out—the occurrence of vaginal hernia—is an important one, but fortunately vaginal hernia is of rare occurrence. I have met with but one instance of this kind. Undoubtedly the principles laid down by the paper are sound ones. It is necessary to obliterate Doug-

las' pouch as described, or by filling it with gauze introduced from the vagina for subsequent removal. I should like to hear Dr. Montgomery speak further on this matter. It is much easier to speak of attempting to obliterate Douglas' pouch than to do it. This is especially true if the patient is not a favorable subject. If the patient be thin and has taken the anesthetic nicely, and the pelvis is not deep, it is not a difficult thing to do; otherwise it is very difficult.

DR. H. D. BEYEA.—I have for a number of years been very much interested in the subject of the treatment of prolapse of the uterus. I was pleased to hear Dr. Montgomery's paper, particularly because the methods he has here described are for the most part those I have always followed. The first step in the operation I have performed is an amputation of the cervix, amputating the cervix as high as possible to hasten and secure the greatest atrophy of the uterus after its position has been restored. The next step is a modified Sims operation on the anterior vaginal wall, the modification being that, instead of leaving a mucous-membrane surface, the whole surface is denuded, thus forming a triangular denudation of the anterior vaginal wall. The apex of the triangle is near the external urinary meatus, the base about a half-inch above the line of suture in the cervix. The denudation is carried deeply, so that it removes practically all of the vaginal mucous membrane and exposes the bladder wall. The lateral extent of denudation is determined by catching the vaginal wall with tenaculum forceps to the right and left of the cervix at the greatest distance which will allow the forceps to be brought together in the median line when the uterus is replaced. Silkworm gut, carried in a curved needle with a round point, is used for suture material. The sutures are introduced transversely, care being taken to introduce them well into the bladder wall and include as much tissue as possible. After these sutures are shotted the appearance is practically that described by Dr. Montgomery. Also, by this means the cervix is tilted backward, and therefore the uterine body forward. The final step is a triangular denudation on the posterior vaginal wall—practically the denudation of Hegar's operation. The denudation reaches as high or higher than the myrtiform caruncle. The apex of the triangle is well up toward the cervix. The sutures, again silkworm gut, carried in the Emmet perineum needle with round point, are introduced from above downward, outward and then inward on the right, and in the opposite direction on the left. Great care is taken to catch a large amount of the fibres of the levator ani muscle and fascia on each side—that amount which can be brought together in the median line, over the rectum, without excessive tension. When these sutures are shotted a considerable amount of the upper portion of each lateral half of the levator ani muscle is brought together in the median line, forming a much more than normally strong and thick band of muscular and fascial support to the perineum. At the completion of the operation

the vagina should only be sufficiently large to admit the index finger. The narrowing of the vagina in this way is of great importance; even in the rarer younger woman with prolapse the vagina is narrowed to admit but two fingers. This small size of the vagina, however, does not persist, but, after the sutures are removed and a month or two have passed, the vagina is found to be no smaller than that of a virgin. This increased size naturally results from relaxation of the muscular supports after the sutures are removed.

Four years ago I did this operation, narrowing the vagina as said, in a woman of about 33 years of age with complete prolapse. Two years afterward she became pregnant, went to term, and I delivered her. The labor was normal, and there occurred only a slight tear of the perineum, which was repaired. I saw her a few months ago and found the uterus still in excellent position.

I believe the important points of the operation are: to catch a large amount of tissue to the right and left in performing the anterior colporrhaphy, denude deeply and pass the sutures through the bladder wall, use a round-pointed needle and transverse sutures; to amputate the cervix high, make a wide and deep denudation on the posterior vaginal wall, introduce the sutures deeply as described, and bring a large amount of the fascia and levator ani muscle fibres together in the median line. By this last operation we gain a many times greater support in the perineum than is possible in any Emmet operation. Narrowing the vagina to the extent I have spoken of, and thus bringing up more completely the supports of the pelvic floor, also has much to do with the success of the operation.

I have performed this operation alone in more than 40 cases, and I am very sure there have been no failures or return of the prolapse. We have done ventrosuspension in only two cases. These were earlier in our experience and before the perfection of the present operation. They were done to make more sure the result, and were, I believe, unnecessary.

In my opinion ventrosuspension is only indicated as an adjunct to the operation I have briefly described, in young child-bearing women where one fears to make the vagina the size of an index finger. Even here I feel it is not truly indicated, for it only makes the result a little more, and, I think, unnecessarily, positive. We have never found it necessary to obliterate Douglas' cul-de-sac nor shorten the utero-sacral ligaments. We have never seen the condition of hernia with prolapse of the uterus.

Dr. G. E. Shoemaker.—The necessity for doing suspension of the uterus in order to gain support is often due to the presence of a retroversion, and if this retroversion is not corrected the support from below is not sufficient in severe cases. Like Dr. Noble, I have thought that occasionally mild cases would be sufficiently benefited by the Alexander operation in addition to the combined operations from below. I have recently

operated upon two cases in this way. This method appears to be inferior to suspension in well-marked cases. The support from below can be best made if the anterior vaginal wall is partly excised. It is my habit to make the denudation largely with the knife handle, after a single median incision has been made through the vaginal wall down to the bladder in the direction of the uterus, downward as near to the cervix as I dare go between the ureters. The knife handle is then used to separate the bladder laterally, and the vaginal wall is cut away with scissors. Then a series of longitudinal layers of continuous suture, made with buried catgut, is placed in the cellular tissue beneath the bladder. This forms a median column and obliterates the denuded area. Over that the vaginal wall is drawn together with a running silk suture in the median line, antero-posterior; a strong column is thus formed in the median line, and, at the same time, the anterior wall of the vagina can be made horizontal and drawn as tight as necessary. No amount of denudation will produce such a strong anterior floor as can be produced by this method.

Amputation of the cervix I consider an important element in the treatment; that of itself insures a higher insertion of the vaginal wall upon the uterus and shortens the elongated tip. It also promotes involution by ligating the blood supply. I have not had occasion to do a hysterectomy for prolapse, as I have always been able to cope with the condition without resorting to this measure. But unless hysterectomy is reinforced by the plastic operations, as Dr. Montgomery has indicated, it would not be helpful in curing descent.

Dr. Beyea.—I should like to ask Dr. Montgomery if he considers ventrosuspension or ventrofixation indicated regardless of the age of the patient, therefore in elderly women as well as women in the child-bearing period. The large majority of women having prolapse of the uterus which have come under my care are well into the postclimacteric period of life. After the climacterium the uterus normally falls to the position of the second degree of retroversion, and, if not prolapsed, it atrophies to less than one-half its normal size. Therefore in these women particularly—and this represents the large majority—after the vaginal supports have been restored and the uterus replaced and atrophied, why is it ever necessary to secure the anteflexion of the uterus of the younger woman by ventrosuspension? If the plastic operations have been well done, I can see no need for subjecting the woman to the additional ventrosuspension. In my experience it has surely been unnecessary. I can appreciate, as I have said, why it is perhaps indicated in a woman who has not passed the climacterium.

Dr. George M. Boyd.—The ground has been so very well and ably covered in both Dr. Montgomery's paper and in the discussion that there is little left to say. In the cases that I have operated upon, in building up the pelvic floor I have resorted to a modification of the Emmet operation, basing it

upon the character of the injury that we find after delivery, often the injury extending up one or other sulcus of the vagina. In all bad cases there is caused a hypertrophic elongation of the cervix, and the importance of reducing the size of the uterus has been dwelt upon.

I notice that Dr. Noble more often resorts to fixation of the uterus. When I was associated with the doctor in the Kensington Hospital we did not fix the uterus; we were satisfied with amputating the cervix, repairing the anterior wall of the vagina, and building up the perineum. I should like to ask Dr. Montgomery whether he does all the operations he referred to at the same time, *i.e.*, both the plastic and fixation. In a case I recently operated upon I felt that it was wise to make two operations: first, to amputate the cervix and then to build up the perineum, and then to give the patient a three weeks' rest; second, to do a suspension of the uterus. In all cases in which I have done suspension I have invariably found the uterus in a retroverted position.

DR. BEYEA.—I should like to ask Dr. Montgomery if he regards a preparatory treatment of much importance. I think it is an important point to place the patient in bed for a week before operation, to keep the uterus replaced, and give large hot-water douches. The object of the preparatory treatment is to stimulate the vaginal walls to contract, and reduce the size of the hyperemic, hypertrophied, and elongated uterus. This allows us to better judge the amount of tissue to be denuded and included at the time of operation. By so doing I feel we make the result more sure.

Another important point is, to keep the patient in bed for at least three weeks, better four weeks, after operation, thus giving opportunity for more complete involution of the uterus and vagina. Also, the sutures should be left in position for three weeks at least.

DR. CHARLES P. NOBLE.—In regard to the first point raised by Dr. Beyea, as to the extreme narrowing of the vagina, I think that one advantage of doing a hysterorrhaphy is that when this is done it is not necessary to exaggerate the perineal operation. Except in young women, if the narrowing is extreme it is quite a nuisance to them in endeavoring to perform marital relations. This narrowing of the vagina is most frequently complained of in this class of operations. I have raised the point that one can do too much. On that account, and from that standpoint, it is wise to substitute the suspension operation as against the extreme resection of the posterior vaginal wall. This is especially true in patients past 40 years of age, because the older they get the less subsequent stretching occurs in the vaginal walls.

In regard to the preliminary treatment which has been referred to, this is very seldom necessary if hysterorrhaphy is included as one step in the operation; also, the patient can leave the bed at the end of three weeks. If the patients can thus shorten their stay in the hospital three or four weeks, it is a point worthy of consideration.

A point that I did not touch upon was the question of hysterectomy. I have done it in a number of cases. In one patient the question of probable cancer was involved; in one or two cases it was done because the women were extremely fat. In them I thought it wise to do a hysterectomy and fasten the stumps down. If the broad-ligament stumps are brought down and fastened to the vagina, while it does not hold the parts up so well as the hysterorrhaphy, it is better than nothing. Unless there is some contraindication to hysterorrhaphy, as the presence of a fat belly, great enlargement of the uterus, or a tumor, hysterectomy should not be done.

DR. MONTGOMERY.—It has afforded me a great deal of pleasure to have the paper which I have read before the gentlemen present so kindly and ably discussed. In considering the subject of the correction of displacements of the uterus, those cases of displacement have been regarded which produced a separation of the pelvic floor muscles, pushing the tissues laterally and practically separating them from their attachments. Thus, we frequently have the vagina rolled out, becoming separated from its attachment to the levator ani muscle and the tissues of the floor of the pelvis, and subsequently causing elongation of the cervix and the formation of a vagino-uterine prolapse. The operation I have done and the one suggested to-night on the posterior vaginal wall is somewhat similar to the section of the anterior vaginal wall, in that it is a splitting of the recto-vaginal septum. In my own experience, I believe a triangular denudation or splitting of the wall is preferable to the Emmet operation, for the reason that we are bringing the parts together in front of the rectum which have been pushed off and separated during the delivery of the woman. We thus bring together not only the levator ani muscles, but the other muscles of the pelvic floor and perineum, forming a firm support. It has not been my custom to place the patient under a long course of preparation preceding operation. I can appreciate the fact that in complete prolapsus, where the vaginal walls are thickened, the previous confinement of the patient to bed for a week or more will result in the absorption of the thickened vaginal walls, which will render the operation more readily performed. I believe that ventrosuspension or ventrofixation is an important part of the operation in all cases in which the prolapsus is extensive. Of course, if it is only in the first degree the described excision and suturing of the vaginal wall will be sufficient to hold the uterus in its proper place. In such an operation where the prolapsus is extensive, although the uterus becomes smaller, it still remains in a retroverted position and the intra-abdominal pressure drives the uterus as a wedge downward, while its maintenance at a lower level keeps it larger and increases the tendency to the redevelopment of the displacement. Fixation of the uterus forward obviates this difficulty, as the intra-abdominal pressure drives it against the pubic bone, which prevents its further displacement. Where the prolapsus has been very marked, with relaxation of the pelvic floor or

elongation of the cervix, and the vagina hangs upon it, the pelvic floor is driven down, while the fundus hangs by the attachments we have created in front. In such cases the condition is obviated by shortening the utero-sacral ligaments. I agree with Dr. Noble that in a woman with a large, fleshy abdomen the operation is a difficult one, and in some cases, where the prolapsus is marked, the utero-sacral ligament seems to have disappeared. By grasping the cervix and drawing it up the utero-sacral ligaments can be recognized, and when contracted the cervix is held up and its downward displacement prevented. In two cases I have seen, hernia followed operation upon the pelvic floor. One case was a woman operated upon at St. Joseph's Hospital, who had had an irreducible prolapse for four years. In this prolapsed mass were found the uterus, both ovaries and tubes, with a large pus collection in one tube and ovary. This collection rendered it impossible for us to do a plastic operation upon the vagina to prevent the redevelopment of the lesion. We were obliged to remove the uterus and pus tubes, reinvert the vagina, and pack the cavity with iodoform gauze. Hernia subsequently developed. In this patient I subsequently opened the abdomen and drew up the vagina from below, having first done a plastic operation upon the anterior and posterior vaginal walls. The fundus of the vagina was fastened up, then the surfaces stitched to the rectum on either side so as to obliterate the Douglas pouch and form a diaphragm at a higher level. I have not seen the patient since this operation and am consequently unable to assert its being satisfactory. The fact that the patient has not returned, however, leads me to believe that she has not suffered inconvenience. In another patient there was a very marked prolapse; the uterus and intestines formed a large tumor. I did a plastic operation upon the anterior and posterior walls of the vagina, and a supravaginal amputation of the fundus of the uterus, after which the stump was fastened to the anterior abdominal wall. A year later the patient returned with the cervix firmly anchored to the anterior abdominal wall, but with the hernia of the intestines projecting through the vulvar outlet, which formed a tumor almost as large as that for which the original operation was done. Had we obliterated the pouch of Douglas in this patient the subsequent lesion would have been avoided. In regard to hysterectomy, in cases of women who are past the climacteric in whom there is a large amount of abdominal fat, making an abdominal operation undesirable, or in which the conditions are such as to render protracted operation unwise, I have preferred the operation of hysterectomy as detailed in my paper. The anchoring of the lateral walls of the vagina to the broad ligaments and the restoration of the pelvic floor proves a satisfactory procedure and effectually obviates the danger of subsequent hernia. I did an operation of this kind in the wards of the Jefferson Hospital this fall upon a woman 70 years of age, without the slightest difficulty in the convalescence and with a complete recovery.

Meeting of February 21, 1901.

DR. JOHN C. DA COSTA *in the Chair.*

EXHIBITION OF A SPECIMEN OF PRIMARY TUBERCULOSIS OF THE FALLOPIAN TUBES, REMOVED BY HYSTERECTOMY.

DR. JOHN B. SHOBER.—The specimen was removed by hysterectomy from a patient on Monday last, and is of interest owing to the complication of pathological disorders which it presents. I found, upon opening the abdomen, that there was a general tubercular peritonitis. The omentum and intestines were adherent to the parietal peritoneum generally, and it was necessary to release these adhesions before I could arrive at the site of operation. There was found a large monolocular cyst of the right ovary; also pyosalpinx of both tubes, general adhesions and a large fibroid of the uterus, and a fibroid nodule occupying the left side of the pelvis. The specimen is interesting on account of the complication. The patient has been convalescent for four days with no interruption.

DR. JOHN B. SHOBER presented a paper on

VARICOCELE OF THE BROAD LIGAMENT.

The term varicocele is usually employed to signify a dilated condition of the veins of the spermatic cord, forming a soft, elastic swelling. In the female the ovarian veins are the analogue of the spermatic veins, and, being situated in the broad ligament, a dilatation of these veins may very properly be termed varicocele of the broad ligament.

The fact that this disease is not uncommon has been well established by a number of writers. The most important contribution to the literature of the subject is a paper by Dr. A. Palmer Dudley, of New York, in the *New York Medical Journal*, August 11, 1888, who reports four cases in which celiotomy was successfully performed for the relief of the symptoms caused by this condition.

Dr. Edward Malins, of Birmingham,[1] has carefully considered the etiology, and reports two cases of symptomatic cure

[1] Amer. Jour. Med. Sci., Philadelphia, 1889, xcviii., 340.

following bilateral salpingo-oöphorectomy and excision of the varicose veins. Other cases have been reported by Baldy,[1] H. A. Kelly,[2] Hirst,[3] and W. R. Wilson.[4]

Looking over the literature, I find in all eleven reported cases of undoubted varicocele of the ovarian veins, and I desire to-night to add one more to this list and to briefly consider the lessons which may be drawn from them.

In the first place, when we consider the anatomy of these veins, their situation and relations to other structures, also the remarkable enlargement which takes place in them during the period of pregnancy and the rapid involution which physiologically should occur during the puerperium, it does not seem surprising that a permanent dilatation of them should remain when involution is arrested or under conditions which tend to disturb the equilibrium of the circulation.

Situated immediately below the Fallopian tubes, between the layers of the broad ligament, they form an elaborate plexus which anastomoses freely with the uterine plexus in the lower portion of the ligament. These veins are poorly supplied with valves and empty into the ovarian veins. The right ovarian vein enters the inferior vena cava at an acute angle, and the left enters the left renal vein at a right angle; hence there is a natural tendency to stasis of the circulation and a greater frequency of varicocele on the left side. Malins has pointed out another peculiarity of these veins—namely, that they have muscular trabeculæ and smooth muscular fibres, which by contracting prevent the free return of blood in the capillaries. This is probably the case under certain conditions, but the probable function of these muscular fibres is to aid the return flow of blood through the veins.

A physiological disturbance of the circulation in the broad ligament occurs in the sexual relations, during menstruation, and in pregnancy, and a varicocele of the ovarian veins arising under these circumstances may be looked upon as an exaggeration of an existing condition and is not uncommon. When, however, dilatation of the veins persists by reason of inordinate sexual indulgence, inflammatory changes, malpositions of the uterus, ovaries, or tubes, or arrested involution, the

[1] American Journal of Obstetrics.
[2] Johns Hopkins Bulletin, 1889-1890, 23.
[3] Medical News, Philadelphia, 1890, lvi., 538.
[4] Ibid., 1891, lviii., 694.

condition becomes pathological and demands our consideration from the standpoint of disease.

Anything which tends to obstruct or retard the free return of blood from the broad ligament through the ovarian veins may be looked upon as a cause or a factor in the formation of varicocele. Among the general causes may be mentioned a deficient power of the right side of the heart from organic disease or some lung complication; also liver affections and disorders of the digestive apparatus, obstructions of the portal system, and renal diseases affecting the tone of the vessel wall. These causes are also common to varicosities in other parts of the body, as in the vulva, the spermatic cord in the male, the hemorrhoidal vessels and the veins of the legs, and the condition should be treated upon the general principles demanded by the case.

The local causes of varicocele of the broad ligaments, mentioned in the order of their importance, are:

1. Subinvolution after labor or abortion. It is said to occur most frequently after abortion, because the muscular fibre cells of the walls of the veins, having attained a partial development, do not so readily undergo fatty degeneration, atrophy, and absorption as occurs after the termination of pregnancy at full term.

2. Extensive lacerations of the cervix extending into the broad ligaments, resulting in cicatrices which tend to diminish the circulation in the vaginal and uterine plexuses of veins, thus throwing extra work upon the ovarian plexus. Under these circumstances there is always an associated subinvolution of greater or less extent, involving not only the uterus but the broad ligaments as well, and the two causes work together.

3. Displacements of the uterus, anterior and posterior, combined with adhesions and inflammatory changes, often associated with prolapse of the ovaries, give rise to varicocele by distorting the broad ligaments and thus obstructing the circulation through the veins.

4. Chronic constipation was a frequent symptom in many of the recorded cases, and is considered to be a cause of varicocele, as it favors a stagnation in the pelvic circulation.

The symptoms are complex and dependent upon the causes which are most prominent in the individual case. All the symptoms of subinvolution, cervical lacerations, displace-

ments, inflammatory changes, and constipation are more or less associated with the characteristic symptoms of the disease itself. These are said to be a sense of weight and fulness in the pelvis, most felt at the sacrum or perineum, and sometimes extending upward toward one or other kidney.

Much stress is laid upon the fact that all symptoms are aggravated by the upright posture, long standing, and exertion, and that they are almost immediately relieved by lying down. In looking up Dr. Baldy's case in the Gynecean Hospital records, I find that she complained chiefly of being tired and dragged out, with weight and fulness in the pelvis during the day, and feeling of refreshment upon rising in the morning.

The diagnosis is made by a consideration of the symptoms above mentioned and the physical examination. This should always be made per rectum, which best enables one to palpate the broad ligaments.

Under favorable conditions without ether, and almost always under an anesthetic, the dilated and tortuous veins can be felt in the broad ligament as a yielding, compressible mass which sometimes may reach the size of a hen's egg.

On looking over the records of the reported cases, I find that almost all have occurred in multiparous women who have suffered from subinvolution, lacerations, and displacements. When the disease is of long standing certain changes take place in the ovaries. Dudley says that these changes are similar to those produced in the testicle—namely, atrophy of the stroma, and interference with the proper development of the ova to such an extent as to produce cystic degeneration and consequent sterility.

The treatment of varicocele of the broad ligament depends upon the complications associated with it. When these do not at once call for operative procedure, general constitutional and local treatment should be tried. The object is to restore the equilibrium of the circulation and build up the general health. Rest, exercise, diet, and regulation of the bowels should be attended to. Local bleeding by cervical puncture is of great value and should be done soon after a menstrual period, and again ten days after, drawing a drachm or two of blood and placing a glycerin tampon against the cervix. The patient should be instructed to take hot vaginal douches daily for half an hour at a time in the dorsal position, allowing the

water to flow freely to the vaginal vault. If there is subinvolution or retroversion it is advisable to place a well-adjusted pessary.

While this treatment may temporarily relieve a few of these cases, I doubt whether a cure will ever be effected by it. It is proper, however, to try it before advising a radical operation.

The operation for varicocele has been followed by symptomatic cure in all of the reported cases. With the exception of Kelly's case and my own, in which the veins were simply ligated in two places, the ovary and tube on one or both sides were removed along with the dilated veins. The necessity for the removal of the adnexa was not always apparent, as in several instances healthy organs were sacrificed. The method most employed for the removal of the veins was the excision of that portion of the broad ligament containing them by a V-shaped incision. In two instances a purse-string suture was used.

The advances made along the line of conservative surgery in recent years have demonstrated the inadvisability of sacrificing the ovaries and tubes unless they are so badly diseased as to demand removal. In the presence, therefore, of comparatively healthy adnexa, it would be quite as unjustifiable to perform oöphorectomy or salpingo-oöphorectomy as to remove the testicle for varicocele of the cord.

The best method of dealing with the varicocele is a subject upon which I hope to receive some enlightenment by the discussion this evening. Three procedures have been employed —namely, excision by a V-shaped incision of the broad ligament and sewing the edges together; a purse-string suture and cutting away the mass; and, lastly, as in Kelly's case and my own, simple ligation of the veins in two places about an inch apart.

As mentioned above, all the cases so far reported resulted in permanent cure. The case which I am about to report, however, was a failure, and may be accounted for by the fact that the veins were ligated with catgut. Shortly after the patient went home she began to complain of the old symptoms, and now, sixteen months after the operation, she is as great a sufferer as she was before.

The above considerations suggest that the best method of dealing with similar cases would be to tie the mass of veins in

two places about an inch apart and excise or sever all the vessels between the ligatures.

Mrs. P., age 30, married eleven years, IIpara, last labor two years ago. During past two years menses every three weeks, duration seven to ten days, profuse, dysmenorrhea. During interval a recurrent soreness and dull pain in left side of pelvis, increased by exertion or long standing and relieved by recumbent position. This is usually followed by a profuse yellow and blood-stained leucorrhea, and seems to have no connection whatever with the menstrual period. She has constant sensations of numbness in the left side, extending upward toward the kidney. Examination showed slight laceration of the perineum, an extensive stellate laceration of the cervix, with much scar tissue in both vaginal fornices. Uterus slightly enlarged, retroverted, and not freely movable. Adnexa normal.

After amputation of the cervix the abdomen was opened and the fundus was found in the cul-de-sac. Both tubes and ovaries were prolapsed, slightly adherent, but apparently normal. In both broad ligaments there were large masses of varicose veins, the left side being most pronounced. The walls of the veins were not thickened.

The mass of veins on each side were ligated with catgut, all adhesions were broken, and ventrosuspension of the uterus was performed. The patient made an uneventful recovery and returned home at the end of four weeks. At the end of sixteen months her physician reports that the only improvement is that her menses occur every four weeks instead of three and that the flow is not so profuse. She still has the dull aches and pains, increased by exertion or long standing.

Dr. E. E. Montgomery.—I do not know that I can add anything to the description which is given of this condition, which in my experience is a rare one, having seen but one patient in whom there was a varicose condition of the broad ligament. In that case the whole posterior fornix of the vagina was a network of varicose veins. There was no marked disease of the ovaries and tubes. The uterus was normal in size, and there were no pelvic adhesions. The vessels, however, were as large as the thumb. A number of ligatures were applied upon the vessels in the pelvis, with the relief of the condition. It was some time, however, before the patient was entirely relieved, for the reason that the operation was done at the Jefferson Hospital, where the condition of the wards was very bad, and infection occurred. I, unfortu-

nately, used silk instead of catgut, and was troubled with the ligatures for a long time afterward. The patient recovered.

DR. SHOBER (closing).—I have nothing to add, except that I had hoped to hear something from the members of the best way of dealing with the varicocele. It is a rare condition, but that it does occur sometimes is well known. It may be necessary to remove the ovaries and tubes with the varicocele; or it may be possible to ligate these veins without disturbing the broad ligament, or, if it should be ligated, to sew it together again.

DR. WILMER KRUSEN read a paper on

OVARIOTOMY IN THE EIGHTIETH YEAR.

Operations upon patients at the extremes of life have sufficient interest and importance to warrant their publication, although there may be nothing exceptional or unusual about the procedure itself. In certain congenital malformations, such as an imperforate rectum, atresia ani, or occlusion of the urethra, the knife must be employed almost immediately after birth. On the other hand, necessity may demand that operations must be performed upon the aged for the prolongation or the saving of a nearly spent life; and very old persons often bear operations remarkably well and recover from their effects with surprising facility. Gross observed that "in old people we are likely to find organic diseases and degeneracies and feeble circulation inducing congestions due to the sinking of the blood in the lungs, liver, intestines, and other dependent parts. They are liable to die of shock or mere exhaustion, and do not bear well losses of blood, lowering of temperature, and loss of food. They frequently convalesce slowly, or, after a partial recovery, fade, waste, and die."

In the case reported nothing but the realization that unless operation was performed death was inevitable would have justified the operation. The patient, Mrs. M. M., was seen in consultation with her physician, Dr. Andrew B. Kirkpatrick, in May, 1899. The characteristic signs and symptoms of a large multilocular ovarian cyst were present, and the following history was elicited: The patient was born February 5, 1820; she had been married and borne eight children, the last at the age of 40. Twenty-six years before she had first noticed a lump on the left side of the abdomen, which had gradually increased in size, but had caused no pain or discomfort until two months previous to examination, at which time the size

and weight of the tumor were interfering with locomotion and with various functions. After consultation it was decided to wait and watch the patient for a few weeks; but the symptoms increasing in severity and the patient's sufferings becoming more intense, immediate operation was advised, and she was admitted to St. Joseph's Hospital on May 24, 1899. The urine examination was practically negative. Measurements: circumference of umbilicus, 45 inches; from ensiform to pubes, 21 inches; between iliac crests, 18 inches; pulse 86, temperature and respiration normal; some slight thyroid enlargement was noted. The operation was performed on May 25, 1899. An abdominal incision, 16 centimetres in length, was made, and a small amount of fluid was found free in the peritoneal cavity; proliferating glandular cysts of both ovaries were

Left ovarian tumor.

found. These cysts were tapped and seven pounds of clear fluid evacuated. There being no adhesions, they were very easily removed and the pedicles ligated with catgut. The abdominal cavity was irrigated with hot normal salt solution and a quantity left in the peritoneal cavity. The peritoneum and fascia were closed with continuous catgut sutures, and the muscles and skin with interrupted silkworm-gut sutures. Only two and one-quarter ounces of ether were required, and the patient's condition when taken from the table was excellent, the pulse full, regular, and strong. Time of operation, thirty-five minutes. The convalescence was uninterrupted, and the only complication was Bell's palsy, which was noticed immediately after the operation and persisted for several

months subsequently. The cause for this we were unable to determine. The patient left the hospital on June 18, and is still living and in good health. The tumors removed were two proliferating glandular cysts weighing, with their contents, over fifteen pounds, and showing numerous calcareous plates in their walls.

Thanks to the kindness of my friend, Dr. J. Wesley Bovée, of Washington, who has sent me reports of cases taken from the Surgeon General's Library, I have been able to prepare a table of ovariotomies upon patients over the age of 80 (see table on page 28). The oldest person undergoing ovariotomy whose history I have been able to find on record is one reported

Right ovarian tumor.

by Knowsley Thornton. His patient was over 94 years of age, and had a small multilocular cyst of the right ovary which was successfully removed.

In 1894 Kelly and Sherwood (Johns Hopkins Hospital Reports, vol. iii.) collected a series of 100 cases of ovariotomy performed upon women over *70* years of age. In this paper they discuss the indications and prognosis of the operation. Their statistics form a strong argument in its favor and prove that age in itself is no contraindication. Spanier (quoted by Kelly) holds that extreme marasmus is not a contraindication; for this is often only a secondary condition

LIST OF OVARIOTOMIES IN PATIENTS OVER THE AGE OF EIGHTY.

No.	Operator	Age.	Nature of tumor.	Result.	Remarks.	Where recorded.
1	Knowsley Thornton.	94	Small multilocular of right ovary; thin vascular walls.	Recovery.	Irritable and difficult of management during recovery.	.....
2	Owens (Brisbane)	87	Ovarian multilocular; no adhesions.	Recovery.	Cystitis for short time after operation. Patient had parovarian on the same side removed eight years before.	Australian Medical Gazette, 1894.
3	Paul Bush (Bristol).	84	Large multilocular ovarian; no adhesions.	Recovery.	.....	British Medical Journal, 1894.
4	Remfry.	83	Right multilocular ovarian; no adhesions.	Recovery.	Patient irritable, with some wandering of mind, during convalescence.	Obstetrical Society Transactions, 1895.
5	Herbert Spencer.	82	Tumor size and shape of cottage loaf; twisted pedicle.	Recovery.	No vomiting or collapse; some wandering of mind.	British Medical Journal, 1893.
6	John Homans.	82	Ovarian; cyst wall friable and brown; multicular; 15 pounds.	Recovery.	.....	Boston Medical and Surgical Journal, 1888.
7	Edis.	81	Multilocular cyst extending to umbilicus.	Recovery.	Clear, jelly-like fluid in cavity of abdomen.	British Gynecological Journal, 1892.
8	Heywood Smith.	81	Tumor adherent to abdominal wall; portion of cyst wall left; weight 47 pounds.	Recovery.	Slight diarrhea during convalescence.	Lancet, June 30, 1894.
9	Carl Schröder.	80	.....	Recovery.	No details of case found.	
10	Pippingsköld.	80	Multilocular cyst; no adhesions.	Recovery.	Patient died fifty days after operation, of gastritis and anorexia.	Finska Lakan Handlingen, 1884. Helsingfors.

of which the presence and growth of the tumor are the cause, and for the improvement of which the removal of the tumor offers the only possibility; that in this sense, therefore, marasmus may be an indication for the operation.

The main facts emphasized by a study of Kelly's table are thus briefly summarized:

1. That ovariotomy in the aged presents no essential differences from this operation on patients of younger years.

2. That the rate of mortality from this operation on patients over 70, as shown by results in 100 cases, is 12 per cent.

3. That the indications and contraindications for ovariotomy in the aged are essentially the same as for this operation in general.

DR. E. E. MONTGOMERY.—Operations in advanced age are always looked upon with uncertainty, yet these cases seem to do about as well when the women are in a fair condition, as in younger patients. I have never done ovariotomy on a woman over 70 years of age. I have done hysterectomy in a woman of 81. She stood the operation well and was able to return to her home. She died, however, from a return of the disease. The uterus at this time was in a state of malignant degeneration. She had been curetted only a few weeks before I saw her. The curette perforated the wall of the uterus, and there was an abscess in the abdomen, shut off by peritoneal adhesions, so that the peritoneal cavity was involved before I had an opportunity to operate. I have a patient now at the Jefferson Hospital who underwent operation ten days ago for removal of the vulva for cancer. She is 78 years old, but has shown no more shock and discomfort following the operation than any other patient in the wards.

DR. KRUSEN (closing).—One point which particularly interested me in the case was the length of time which the patient had been conscious of the presence of the tumor. It was twenty-six years from the time of first noticing it. The symptoms had been slight, and the growth must necessarily have been very slow.

DR. H. D. BEYEA read a paper on

THE OCCURRENCE OF FIBROID TUMORS IN FOUR SISTERS, MOTHER, GRANDMOTHER, AND AUNT.

DR. E. E. MONTGOMERY.—When we remember the fact that thirty per cent of all women who reach the age of 30 years have fibroid tumors, we do not require the hereditary predisposition to find four females in one family with fibroid tumors. I have not had any experience which would lead me to believe in hereditary predisposition to these growths.

DR. JOHN G. CLARK.—I think that in tumors of the female genital tract there is little in the way of heredity.

Our German brothers are inclined to bring out new theories for diseases, and lately they have announced that fibroid tumors are due possibly to cardiac lesions. They describe a condition found as "myoma heart," in which the heart is somewhat weakened, and they attribute many of the sud-

den deaths following myomatous degenerations to cardiac affections. There is some question, I think, of the relation of cause and effect—whether the heart is weak because of the myomatous condition, or whether the myoma has arisen because of the cardiac condition. I feel, in a general way, that heredity is not of any great value in coming to a definite conclusion as to the origin and etiology of these tumors.

DR. JOHN B. DEAVER presented a paper on

THREE DANGEROUS OPERATIONS—REPAIR OF A LACERATED CERVIX, DILATATION, AND CURETTEMENT.

The paper is a protest against the indiscriminate use and the abuse of three operations which in themselves are excellent procedures and capable of accomplishing much good, but which are often performed without due deliberation and knowledge of the indications and contraindications.

A lacerated cervix in women who have borne children is so common that it may be considered as more of a normal than pathological condition. In the absence of special indications, such a cervix had better be let alone. If, however, a lacerated cervix be extensive enough to permit gaping of the edges and consequent ex osure of the cervical mucous membrane to injury, or if ulceration be present, or if the scar tissue is hard and in excessive amount, or if any of these conditions give rise to subinvolution or marked reflex symptoms, then operation is indicated. If, in addition to any of the above conditions, there is a history of hereditary tendencies toward malignancy, we have the strongest indication for operation. A patient with a family history of carcinoma, presenting the above conditions, should be operated upon at the earliest possible moment; and this should be repeated after subsequent labors, if the cervix be again torn, as it is likely to be. As strong as these indications are for operative interference, we are not justified in instituting them unless there is freedom from all pelvic inflammatory processes or their resu ts. Salpingitis, pyosalpinx, or adhesions offer strong contraindications. Under these circumstances, abdominal section for the correction of the intra-abdominal trouble should follow immediately the repairing of the lacerated cervix. If the cicatricial tissue in a lacerated cervix involve the supravaginal cervix, it may be sometimes impossible to remove it entirely, except by high amputation of the cervix with freeing of the bladder and rectum; if under these circumstances there is a history of a hereditary tendency to malignancy, or if the patient be near or undergoing the menopause, vaginal hysterectomy may be considered the more rational procedure.

In the presence of endometritis, great care must be exercised to prepare the endometrium, if this be possible prior to the narrowing of the cervical canal, so as to provide adequate drainage—or, in other words, to decrease the discharge so that the new and narrow canal will carry it off.

Equally as important is it to carry out every aseptic detail

during the operation and antiseptic preparation of the field of operation, in any one of the three operations under discussion, as it is in any in the realm of surgery.

That these operations are capable of converting a latent salpingitis into an active one every abdominal surgeon of experience can testify. It can be brought about in one of several ways: first, and most important, by the introduction of sepsis through instruments or intrauterine douching, or the spread of sepsis from an infected uterine cavity, or by the breaking up of periuterine adhesions, liberating septic foci which have been imprisoned.

Adhesions can be torn by bringing the uterus down to the vulvar orifice; the tenaculum should only be used to steady the uterus, and not to make traction during dilatation or repairing of the cervix.

Washing out the uterus, except in septic conditions, also plugging the uterine cavity with iodoform gauze, I regard as vicious practices, which in themselves are too often capable of exciting inflammation in the Fallopian tubes. Even in septic conditions of the interior of the uterus the intrauterine douche should be very carefully done, and the packing introduced for the purpose of drainage, and not to its exclusion.

Curettement of the uterine canal is a dangerous operation, and one which calls for great delicacy of touch and the most rigid observance of aseptic and antiseptic details. The indications for its performance are positive, although one should never forget the contraindications.

The indications are for the correction of septic conditions of the cavity of the uterus, both acute and chronic. In the acute form of endometritis, which is post-puerperal infection as a rule, we curette with propriety to remove retained foreign matter; we must beware of the great danger of uterine perforation—an accident which can and does happen with the most startling ease. In chronic endometritis, the persistence of the disease, and the constant danger of tubal infection and peritonitis, or lymphatic infection and peritonitis, make curettement an operation of wisdom in many cases. We should, however, have in mind the likelihood of the lighting-up of a latent salpingitis or latent sepsis in some other locality, and be prepared to complete the operation by removal of the foci of pelvic inflammation.

If the discharge arising from an endometritis shows the presence of gonococci, curettement is positively contraindicated, for it is certain that such a procedure will most probably light up an active gonorrhea which shows marked tendencies to spreading and consequent tubal involvement.

When the indications for curettement are established, then the operation should be done with an intelligent thoroughness which will leave no portion of the cavity untouched by the curette.

In advanced carcinoma of the cervix, where other and more radical measures are impossible, curettement followed by the

application of the cautery is indicated and will lessen the patient's discomfort.

Flexions of the uterus combined with endometritis in the absence of adhesions indicate dilatation followed by curettement.

Dilatation of the cervical canal is an operation which offers a fruitful field for the ambitious surgeon. It is devoid of cutting and is practically bloodless, and therefore appeals to a patient. If it was not so dangerous and inefficient I might be induced to sanction it and perform it more often than I do. Recently America's greatest gynecologist said to me that a dilatation of a cervix caused him greater anxiety for the first days following an operation than would a bad pus section or hysterectomy.

Slow dilatation by sponge tents, even though protected by a sterilized rubber cot or by gauze or sponge packing, offers no advantages over divulsion and is attended by much greater risks of sepsis. I would especially condemn the attempts—and I say attempts advisedly—to dilatation in the physician's office, as it is a most dangerous and useless practice. Divulsion should never be done except under complete anesthesia and with the most rigid observance of aseptic and antiseptic precautions. Antiseptic preparation of the vagina is as important here as it is for a vaginal hysterectomy; the vulva should be shaved, and the vulva and vagina, after preparation, should be protected by iodoform or sterile gauze. The operator and all assistants and nurses should wear sterile rubber gloves.

Dilatation is indicated in dysmenorrhea due to cervical stenosis, as a preliminary step to curettement when there is a displacement of the uterus which is not adherent, and when there is an absence of pelvic or tubal inflammation, either active or latent.

Divulsion for stenosis of the cervix is at best an unsatisfactory measure, as it frequently fails to meet and overcome the condition. It is often necessary to repeat the operation several times before relief is afforded. After the first divulsion, in addition to the stenosis, we have the rigid scar tissue to deal with, and here it is comparatively easy to lacerate the cervix.

Frequently relief is not experienced at the first menstrual period following the operation; so that we should not be too hasty in repeating the measure, but should wait until the evidence of failure is positive.

Dilatation as a method for the correction of flexions of the uterus must be classed among the surgical failures; I have never been able to satisfy myself that it has accomplished the slightest bit of good.

The recognition of one condition—an infantile uterus in a woman suffering from dysmenorrhea—will or should demonstrate the futility of attempting to restore a cervical canal by dilatation in an organ which is congenitally defec-

tive. Operation under such circumstances is always attended by failure, because the source of the trouble is the result of the abnormality of the uterus itself or in conjunction with its adnexa. This is also true of the other congenital malformations of the uterus, viz., the bicornate uterus, etc.

DR. GEORGE ERETY SHOEMAKER.—The points are all those of common experience among surgeons. The one which I think requires special emphasis is in regard to dilatation and curettage in the physician's office. If there is one abuse above another which is responsible for trouble among women, it is that procedure, and at the present day I believe it is highly reprehensible, because dangerous and unnecessary, to curette or dilate under circumstances which preclude the proper sterilization of the field. Large numbers of cases of invalidism and peritonitis follow that custom, and yet time after time those who work in hospitals see cases in which that procedure has been carried out.

DR. E. E. MONTGOMERY.—The greater portion of the paper I can heartily agree with. One great reason why these operations are attended with bad results is that they seem simple, and those who have not had the habit of surgical cleanliness, which has been spoken of, essay these operations. I individually feel that one cannot observe too great care in cleanliness and in the preparation of a patient for an operation of dilatation and curettement. The dilatation and curettement of the uterus in one's office I should regard as a crime. I should feel the greatest anxiety about a patient who was permitted to get up within a week after such an operation had been done.

In regard to the dilatation for exploration in case of cancer or fibroid growth in the uterine cavity, I do not think any method is equal to the laminaria tent. In the use of this it is important that the most careful antiseptic and aseptic measures be taken. The dilatation favors the ability to introduce the finger, and the exploration of the cavity is more satisfactory than will be the examination of any scrapings which may be obtained from the uterus.

I fully agree as to the wisdom of making an abdominal operation an absolute *sine qua non* in any case in which there are inflammatory conditions about the uterus. I should feel that to curette the uterus where there were inflammatory conditions, without opening the abdomen and treating the conditions, would be to invite disaster.

The operation for laceration of the cervix is one which is performed much more rarely to-day than a few years ago. The methods of antisepsis and asepsis in obstetrics decrease the effects of this lesion. The conditions which we have to treat to-day are rather those of partial lesion of the cervix, in which the uterine cavity stands open, with a certain amount of eversion of the mucous membrane and hypertrophy of the structure, and in which amputation of the cervix is preferable to the Emmet operation. I was impressed with a remark by Dr. Emmet this winter, when he came on to hold a clinic for me,

that he very rarely found cases in which it was necessary to do the operation he had devised.

I fully agree as to the importance of every precaution in these cases. The reason we had trouble in the old cases of operation on lacerated cervix was that the increased secretion had difficulty in getting out of the uterus through the small canal. Dilatation of the uterine cavity and of the orifices of the tubes resulted, so that we had the most favorable condition for extension of inflammation from the uterus into the tubes.

I do not say that the cases which were formerly subjected to operation for laceration of the cervix should not be considered as requiring operation at all. I question also as to the matter of operating as in cancer of the uterus. If the operation is required, I should do it without any reference to the hereditary tendency. I believe very little in this from my own experience.

Dr. B. C. Hirst.—I have little to say about Dr. Deaver's paper, which is, I imagine, addressed more to the general practitioner than to the specially trained surgeon in gynecology.

I would differ with him in several statements. In regard to a vaginal hysterectomy for a tear of the vaginal vault, I do not think that gynecologists would agree with him that an extensive tear in this locality is an indication for vaginal hysterectomy. I also could not understand why he should be disinclined to use the intrauterine douche. If given properly, there is not the slightest risk from it.

I understood Dr. Montgomery to say that he preferred the digital examination of the uterine cavity to a microscopical examination of scrapings. This is a statement with which, I think, we cannot all agree. I have had a very satisfactory experience with microscopical examinations of the endometrium, and have the greatest confidence in the ability of certain trained examiners in this work to make a correct diagnosis. I have watched a number of cases studied by competent men, and I cannot recall one in which the microscopical findings proved to be a mistake. It depends, of course, upon the microscopist. Not many men in this large community are capable of doing the work correctly. There are, however, I think, a few who can be relied upon to give a correct opinion.

There is one point I wish to make for myself in regard to operations on lacerations of the cervix. I have come to the conclusion that the primary operation on lacerations of the cervix, strictly speaking, is not warrantable. One cannot get a sufficiently large proportion of successful results to make it worth while. I have found, however, that at the end of two weeks the involution of the cervix is sufficient to allow of a certain success in the repair of any injury that may have happened to it. So it is an interesting question, I think, whether many of these injuries ought not to be repaired before the woman's puerperal convalescence is complete. I think there is no doubt as to the answer to that question in well-

equipped institutions. Personally, in the hospitals under my charge I do not propose to let any woman leave with an injury from childbirth, whether recent or remote, if she will consent to its repair. If the cervix is badly torn it should be repaired at the end of two weeks. Injuries to the perineum, as we all know, can be repaired at once. In making my routine examination of injuries of the cervix, I find cases in which there are remarkable changes in the two weeks; often cases which looked very bad at first, at the end of two weeks would not warrant operative interference. There still remain conditions, however, at the end of this period, that will be likely in the future to give trouble. In such cases, if the surroundings are favorable and if the equipment possessed by the physician is good, I think better results would be secured in the future by treating the cervix as we treat the perineum. The only difference is that the repair of the cervix is postponed to the end of two weeks, while that of the perineum is done immediately.

Dr. John G. Clark.—My experience is exactly along the line of that of Dr. Hirst, that the microscopical examination of the scrapings is a valuable aid in diagnosis. If a mistake is made it is not owing to the method, but is the fault of the brain behind the microscope. If we depend upon the clinical side of the question we may take out a uterus which should by no means come out. I have followed this line of work for the last six or seven years, and the more I see of it the more convinced I am of the diagnostic value of curettage. I do feel, however, that the value depends largely upon the man who does the work. I remember two or three years ago an instance of a man who had taken a thorough course in microscopy and in pathology, who also went abroad and studied under Pick and Dilatante. Shortly after coming back I saw one specimen under his microscope which he had diagnosticated malignant adenosarcoma. It was as simple a case of dilatation of the glands of the uterus as one could ask to see. Examinations by such a man as this are infinitely worse than those made by clinical data. In this question of diagnostic curettage a special form of pathology is involved. Many a man who in general is a good pathologist will promptly make mistakes in this special field. In gonorrhea and in growths of the mucous membrane we see changes in glands which look much of a carcinomatous nature. Nevertheless the skilled man will be conservative in diagnosis, and, if the diagnosis is so difficult to make, the patient may with safety wait and have another curettage. I would much prefer the second curettage for this absolute settling of the diagnosis than losing the uterus under circumstances which did not warrant its removal.

Other cases in which dilatation is dangerous, and to which Dr. Deaver has not called attention, are those of married women with a persistent discharge—women who have not been perfectly virtuous. Curettage will infect such patients, and they should be most carefully looked into before attempting an operation.

Then, again, we know that these operations of the minor type are much abused; men do these operations who are not capable of making a diagnosis within the pelvis. I think this is the experience of every man who sees these cases frequently.

It is the experience of every man that on careful diagnosis he will find some grave condition, the result of this laceration. I agree, however, as to the gravity and danger of resorting to this operation indiscriminately. I would lay special stress upon the careful study of these cases when there is suspicion of carcinoma; upon the dangers of curettage in cases with gonorrheal history, and against curetting in a general way without making first a very careful diagnosis of the case. I have noticed time and time again, as you call students to make a diagnosis in a case of laceration of the cervix, that if you have not laid special stress upon the inadvisability of operating, eight out of ten will say the case should be operated upon. If in the country at large the tendency is to take this view, we must feel that a good deal of unnecessary work of this type is being done.

DR. GEORGE M. BOYD.—I consider Dr. Deaver's paper very valuable in the stress which he lays upon the care which we should exercise in the operations which he enumerates. I indorse what Dr. Shoemaker says in regard to the condemnation of office dilatation and curetting sometimes resorted to, and of the importance of making careful examinations of the abdominal and pelvic organs before these measures are resorted to.

The paper is also valuable in the sense that it is directed chiefly to the general practitioner and is one that will do a great deal of good.

DR. JOHN H. GIRVIN.—I think Dr. Deaver has laid the proper stress on the dangers, but a word might be added as to the difficulties of these various operations, particularly for the general practitioner. I think any one who sees a good many of these cases brought to the hospital will realize that curettement is not a simple operation from the standpoint of procuring a cure of the symptoms. We very frequently see cases that have been curetted time and again. Cases that have been curetted by men who are not specialists and not doing much of that work will almost always need two or three curettements before the desired result is accomplished. I think the same may be said about the repair of a lacerated cervix, but possibly to a less degree.

It seems to me the fault with a great many dilatations is that they are not properly done. The symptoms are not relieved because the technique of operation is not properly carried out and not enough time is consumed in the operation.

The difficulty and importance of securing a proper specimen for microscopic diagnosis should also be emphasized.

DR. JOHN C. DA COSTA.—I am glad to hear Dr. Deaver speak so emphatically on these matters, and hope the general practitioner, for whom it is intimated that the paper is written,

will read and profit by it; but this I doubt very much. These operations seem so easy to do that they are done too frequently. Too many office operations are done, and the wonder is that more harm is not done.

I do not agree entirely with Dr. Deaver in regard to amputations and trachelorrhaphy. A good many trachelorrhaphies are done when amputation of the cervix ought to be done. Unless a man understands his business he will often mistake an ectropion for laceration. I see no reason why trachelorrhaphy should not be done when the tear does extend into the vagina as when it does not so extend.

With regard to packing the uterus after dilatation, I have found that packing it with sterile gauze not only drains but stimulates the uterus to contraction. Then, too, the gauze takes up in its meshes any little fragments of tissue which may not have been gotten out. As to washing out the uterus, I see no reason why it should not be washed out as well as any other open wound.

With reference to the danger of dilatations, every operation is dangerous if done by men who do not understand their business, but in the hands of a *trained* man there is little or no danger in dilatation. A man of any sense would not dilate the uterus if he found pyosalpinx or enlarged tubes, unless he were prepared to open the abdomen and remove the offending organs.

Dr. Deaver says that dilatation for anteflexion is useless. Let me state one case. The woman had been married seven years and never pregnant. She was worn down with suffering; her menstruation was a week of agony. I dilated and curetted her for a sharp anteflexion. Upon meeting her two or three months afterward I absolutely did not recognize her. She had gained twenty-five or thirty pounds. Menstruation was full and painless, and in fourteen months afterward I confined her of a big girl. This is only one of several cases.

Dr. Deaver (closing).—The paper has served its purpose. Of course it was not written for the trained gynecologist, and the full discussion which it has received makes me feel warranted in having presented it to this Section.

There were two or three points brought out with which I do not agree. For instance, in the element of heredity in carcinoma. I believe that in many of these cases traumatism is the exciting cause, but I am a strong believer in heredity. I am equally a strong believer in the importance of early and positive interference in any condition of suspicious malignancy in women whose mother or grandmother has died of carcinoma of the uterus.

I take exception to the douching of the uterus as after an ordinary dilatation and curettement. I believe there is an element of risk in the routine douching.

As to the diagnostic value of curettage, with all due regard for what has been said on this, I still believe more fully in the trained clinical observation in making a diagnosis.

I believe a laminaria tent would be safe in Dr. Montgomery's hand, but with the indiscriminate use of this I believe much harm would result.

As to the curability of flexions by dilatation, of course there are exceptions, but in the majority of instances I do not think much is accomplished.

DR. JOHN H. GIRVIN presented

A CASE OF INFECTIVE FEVER RESULTING IN PREMATURE LABOR, PERITONITIS, AND DEATH.

The following case is reported because it seems to me to present many interesting and puzzling questions from the standpoint of etiology, as well as to emphasize the difficulties of determining the extent of an infection after labor and the question of operative interference.

Mrs. C. R. was admitted to the medical ward of the Presbyterian Hospital on January 1, 1901, with a provisional diagnosis of pneumonia. On the following morning the history was taken, which I copy from the records of the medical ward by permission of Dr. J. H. Musser.

Mrs. C. R., white, age 18; housewife. Married eleven months; no miscarriages; no labors; at present pregnant for the first time at about the seventh month. Menses began at 14 years; always regular. Husband acknowledged gonorrheal infection at the time of marriage, but she has never had any leucorrhea, though she has had at times frequent and painful urination for the past year. Mother died in confinement; otherwise family history is negative.

Present illness began about January 20 with a slight cold. On the 27th she was taken suddenly with vomiting, chill, and pain in the side, since which time she has been constantly in bed with a high fever and at times delirious, but has not been attended by a physician.

At present, examination shows a rapid, regular, but rather galloping pulse; heart sounds soft, slight systolic murmur with the first sound. Tongue slightly coated, but moist. Chest, slight impairment in the left axilla and left and right lower back. Sounds clear over the front of chest, but in the axilla they are harsh, and there are a few crepitations in the back; on the right side sounds are distinct, while they are harsh on the left side. There is no tubular breathing. Examination of urine shows a specific gravity of 1.010, trace of albumin, no casts, no sugar, but pus and epithelium present.

For two days the condition remained about the same, with

the exception of an increasing amount of pelvic pain, and on Sunday morning, about 2 A.M., she was delivered of an apparently healthy male child of about eight months, which lived until the following Tuesday morning. She was attended by the resident physician, who reported a normal, easy labor and complete expulsion of the placenta. Labor was followed by a fall of temperature to normal, but an immediate rise to 103.6°.

At this time percussion note over the chest was distinctly impaired at the right base and at the left base and at the apex behind, but there was no distinct tubular breathing. The urine examination was the same, with the addition of a few red blood corpuscles. Widal examination negative and blood examination for malaria negative. Leucocytes, 18,200 present.

At this time I saw the patient for the first time, and found her with engorged and tender breasts, very large, heavy, and painful. The abdomen was slightly distended and tense, and there was some tenderness in both ovarian regions, but this was not marked. Vaginal examination showed a relaxed vaginal outlet, very slight discharge, and the uterus in good position and fairly well contracted. On the right side there was slight tenderness and a little fulness, but no distinct mass. Tube and ovary could not be mapped out. On the left side a very much distended rectum so filled up the pelvis that nothing else could be distinguished. The examination did not cause very severe pain. The lochia had been normal but scanty, but during the last few hours had become more scanty and dark-brown in color and with a strong meaty odor, but was at no time purulent or offensive. Examination of the vaginal discharge at this time failed to show either gonococcus, streptococcus, or staphylococcus.

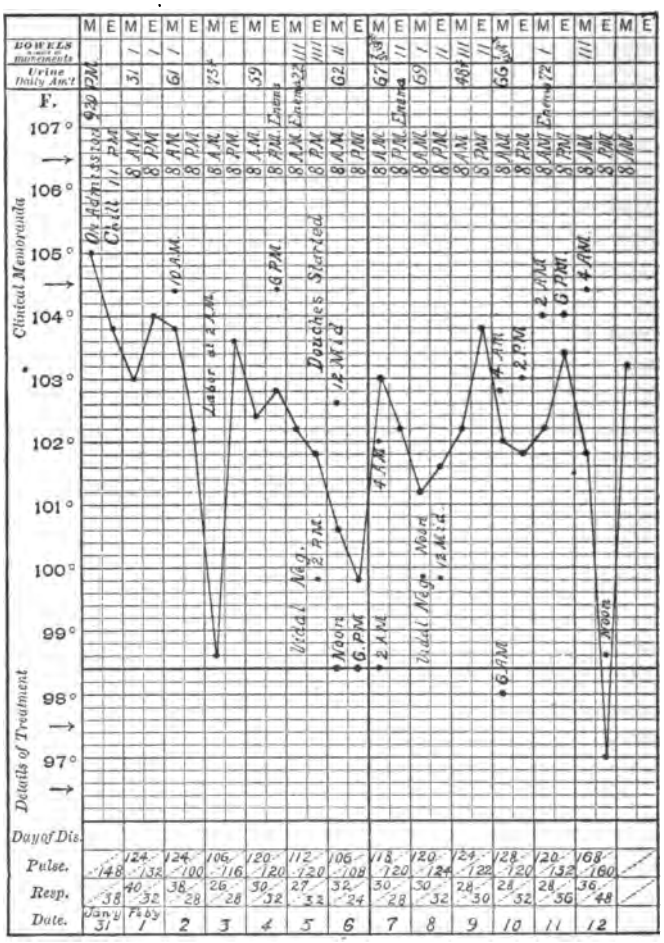
I advised thorough purgation, vaginal and intrauterine irrigation twice daily; turpentine stupes over the lower abdomen; compression and support of the breasts; and somewhat increased stimulation. This was followed by three large bowel movements and a drop in the temperature to normal, where it stayed almost all the next day. During that afternoon the examination of blood showed 17,000 leucocytes.

The condition continued about the same for the next two days, with the exception of a slight increase in the tenderness in the lower portion of the abdomen. Leucocytes at this time, 19,800.

I saw her a second time on February 9 and found slight distension of the abdomen, with some tenderness in the right

ovarian region, but no distinct mass; almost no vaginal discharge; leucocytes 16,000, and there seemed to be no indication for operative interference. On the following day leucocytes 23,600.

On February 11, as the chest symptoms had entirely cleared



Acute purulent peritonitis.

up, she was transferred to my ward late in the afternoon. I saw her the following morning, and found her with a rapid, running, feeble pulse; skin cold and moist; color very pale, almost bluish; abdomen distended and tender, with abdominal muscles rigid. Vaginal examination showed the uterine os

well contracted; uterus rather large and flabby, but no distinct fulness in either vaginal fornix. No vaginal discharge. There was evidently a general peritonitis, and, as the patient was almost moribund, there seemed no indication for any operative measure. Dr. George Erety Shoemaker saw her with me at this time and concurred in this opinion.

She died the following day at 8 A.M.

Autopsy, by Dr. W. E. Hughes, February 13, 1901.—*Right pleural cavity* contains no fluid. There is a small amount of recent lymph on extreme lower and outer border of lower lobe and upper border of diaphragm. No old adhesions. *Left pleural cavity* contains no fluid. Recent lymph over lower half posteriorly of lower lobe and surface of diaphragm. *Right lung* crepitant throughout. In lower lobe there are a few wedge-shaped areas of extreme congestion. *Left lung* tissue crepitant throughout. Areas of congestion similar to those in right lung. They are more numerous. Their bases are distinctly raised above the surrounding lung tissue. In no place is there any distinct pneumonic consolidation. There are similar areas in upper lobes. *Pericardium* contains no fluid; no adhesions. Heart shows nothing remarkable. *The abdominal cavity* is filled with yellow, purulent fluid freely distributed throughout. *Abdominal organs* are covered with lymph, but there are no adhesions except in pelvis, where about the uterus they are broken up with considerable difficulty.

The *left Fallopian tube* is bound down firmly by adhesions at the fimbriated extremity; is enlarged to about three-quarter inch in diameter. On pressure pus exudes through fimbriated end. Posterior to this is a pus-containing sac, 1 inch thick and 2 inches long, which has evidently been developed in the ovary. *Right tube* apparently healthy, but a few drops of pus can be squeezed out from the extremity. *Right ovary* healthy but for a slight cyst in its substance.

Uterus: The placental site is apparently healthy. The uterine wall does not seem to be inflamed or contain any pus foci. Endometrium normal.

Left ureter is dilated to about three times its normal size. Pelvis of kidney also dilated. Mucous membrane of ureter is not inflamed. *Left kidney:* Pale. Relation of cortex to medulla about normal. Numerous areas in kidney congested, tough on section; probably destruction of substance. Areas of purulent collections one-quarter inch in diameter. *Right Ure-*

ter: Dilated as left. Pelvis dilated. Walls thickened. Contains purulent material. *Right Kidney:* Substance pale. Streaked in cortex and medulla with pus. *Spleen:* Large and dark. Contains a hemorrhagic infarct. Not infected. *Liver:* Capsule of Glisson strips very easily. Liver tissue is soft, mottled. Area of acute congestion. No pus foci.

Pathological Diagnosis.—Ovarian abscess; pyosalpinx; general septic peritonitis; surgical kidneys (?).

Cause of death; septic peritonitis.

Bacteriological examination of pus taken from the peritoneal cavity showed the presence of the colon bacillus, which was also found in the pus from the Fallopian tubes. The pus from the kidneys showed the presence of streptococcus only. Unfortunately no culture media were at hand for growing the gonococcus, so its presence or absence was not determined.

The following questions present themselves: What was the cause of the original infection producing the sudden attack of nausea with vomiting, chill, and fever, occurring four days before her admission? Was it an attack of influenza and was the same cause responsible for the premature labor? Was it an influenzal pneumonia which produced the high temperature and induced the premature labor, although with so few physical and postmortem signs in the lungs? What part did the ovarian abscess play in the course of the attack? Could it have been of influenzal origin, as there were no evidences of its having been formed from a tubo-ovarian formation? How may we connect the symptoms and history with the surgical kidneys? Their appearance did not indicate the presence of more than about three weeks of acute inflammation, but may there not have been a slight focus of infection from old gonorrheal cystitis which was lighted up by an attack of influenza in the latter weeks of pregnancy? Unfortunately no examination was made of the inside of the bladder. Pus was present in the urine at the time of admission.

May the salpingitis have been started up at the time of labor from a latent infection of the tubes, or possibly from rupture of the ovarian abscess and the septic peritonitis caused from this? Both infections show the colon bacillus post mortem. The temperature remained high, with the exception of the drop immediately after labor until the fourth day after delivery, at which time it again arose and remained high until the day before death.

I am led to the belief that the sequence of events was first

an influenza, followed by an influenzal bronchial pneumonia causing the high temperature and the premature labor, and that there had been an old gonorrheal infection which was dormant in the tubes, and which had probably also caused a cystitis and an old but slight infection of the pelvis of the kidney, and that the influenza started this up, and the labor prepared the way for the acute salpingitis, which was soon followed by the septic peritonitis, producing a fatal result.

This does not account for the ovarian abscess, and I am unable to satisfy myself as to its proper place in the case, although I feel that an influenzal infection may cause an ovarian abscess. The woman was undoubtedly in a generally severely septic condition at the time of her admission, and this may have caused the premature labor. It certainly contraindicated any operative interference from the very first, and may explain all of the symptoms without the introduction of influenza, but I feel that here lies the interest of the case.

DR. GEORGE M. BOYD.—I agree with the writer of the paper in his conclusions; it seems to me that this was an ovarian abscess, possibly gonorrheal in origin, which had existed for some time, and the pregnancy had rekindled the latent trouble and developed the symptoms of infection prior to her delivery at term.

DR. GEORGE ERETY SHOEMAKER.—I first saw this woman a few hours before death, ten days after labor, and when she was practically dying. The question whether it would at any time have been helpful or wise to operate is a difficult one to decide, as no gynecologist saw her till very late. The temperature when she was admitted to another department of the hospital was 105°, and this before her labor. The lung symptoms were not favorable for operation under any circumstances The ovarian abscess which was found at autopsy was evidently old and was small. It never could have been as large as an egg. It was my impression that this was the source of the sepsis existing prior to labor. A labor supervening upon a septic condition, with already infected kidneys, is a very unfavorable incident, and abdominal section under these conditions would almost certainly have been hopeless, even if done as soon as the child was delivered.

DR. GWYN.—Dr. Musser asked me to say a few words about this case. He was unable to find any definite symptoms of pneumonia. There was, as the history says, slight dulness at both bases, but never any tubular breathing. There were a few crepitations. The general appearance of the patient was more that of some severe infection, and the question of typhoid fever was first considered. There was no definite abdominal pain until after the delivery, except the pains which had occurred for eighteen hours before delivery, accompanied by

hemorrhage. After delivery the pain was localized in the left iliac region. For some days after labor the temperature persisted. Until the occurrence of local symptoms we thought the condition was most likely some general infection. The history of gonorrhea in the husband was looked upon as being suggestive of the possible origin. Catheterized specimens of urine were reported as showing but very small amounts of pus.

DR. JOHN B. DEAVER.—I look upon the case as one of clear septic peritonitis. I believe that even if as much time had been spent upon the abdominal cavity as upon the examinations of the patient's blood the result could not have been different.

DR. EDWARD P. DAVIS.—In reviewing the history of Dr. Girvin's case I am led to the conclusion that the original infection was of the urinary tract. The comparatively healthy condition of the generative organs, the general peritoneal infection, and the lesions found in the kidneys point to this conclusion.

His case tallies well with one under observation some years ago at the Jefferson Maternity. A young woman in the pregnant condition and suffering from acute gonorrhea was admitted shortly before confinement. After labor she slowly developed a septic process which could not be referred to the generative organs. It was evident that the kidneys were infected, as the urine contained pus and acute cystitis could be eliminated from the diagnosis. She died of pyemia, and autopsy showed both kidneys to be infected with multiple foci of pus formation. The generative organs were comparatively healthy.

In such a case the occurrence of labor is followed by general peritoneal infection. This has been observed by others, and we must believe that the mechanical disturbance of labor often lights up to acute infection a chronic process which has become latent.

So far as treatment is concerned in these cases, it is questionable whether operation could avail. The removal of a kidney in a patient already suffering from peritoneal infection would probably be followed by death. Incision and drainage of such kidneys might in some cases be permissible.

DR. GIRVIN (closing).—There was no question of there being finally a general peritonitis, but the symptoms of that peritonitis did not develop until the last few days. She was distinctly without symptoms of peritonitis for the first week after her labor.

I had hoped there would be some discussion on the probable condition of the kidneys at the time of labor, as it was evidently an older infection than the infection of the pelvis. There was also the presence of the streptococcus in the kidney infection and not in the infection of the tubes and general peritoneal cavity, where the colon bacillus seemed to be the cause. I think there was septic infection unquestionably, but whether there was septic infection before the case came into

the hospital, and whether this produced the premature labor, is another question, difficult to determine.

DR. J. M. BALDY read a paper on

RESULTS OF TREATMENT OF CANCER OF THE CERVIX, AND THE UNRELIABILITY OF STATISTICS ON THE SAME.

With our present knowledge of the results of cancer of the cervix uteri, it is somewhat startling to read many of the reports of this disease of the past five years or so and to contemplate the many times repeated assertion of from 40 to 80 per cent of cures in the hands of surgeons. We know now that such reports are worse than useless and could only have been arrived at either by a most wilful juggling of figures or by a lamentable carelessness in the observation of facts and the recording of the same.

Cancer affecting the cervix uteri is one of the most deadly diseases with which medical men have to deal. By far the largest proportion of these patients eventually die of cancer, be it from the primary lesion or from a recurrence. And this in spite of all that has been done for them either surgically or medically.

It is to-day almost universally conceded that in its inception the disease is a local one and that the hope of a cure rests in an early removal of the disease—in other words, in surgical methods. No doubt cancer *is* curable if removed sufficiently early, but herein lies the hitch. What is sufficiently early? No man has yet solved this question. What occasionally appears a hopeless case, after an operation remains well for years; what seems a most promising one, very frequently, dies of the disease within a year or two. It is this lack of precise knowledge as to the line of safety which often staggers one in his belief of a local origin for the disease, and yet, as far as our present knowledge is concerned, it all tends to force the conclusion of primarily a local disease. Be this as it may, the hope for the future appears to me to rest in a more careful clinical study and diagnosis, and in this alone. The microscopic reports are well enough as far as they go, but first we must have a more careful education amongst physicians as to the clinical features, else in the future, as in the past, these cases will continue to come to us too late for a cure and little progress will be made in overcoming the disease. I am firmly convinced that too much attention is being placed, especially in educational institutions, on the laboratory and too little on clinical teaching. In this matter of cancer every-

thing depends on the clinician; the microscope is secondary and corroborative.

It is only fair to ourselves that we recognize the true position of cancer to-day, wipe out the past and begin anew—and it is lamentable to have to acknowledge that we must begin again almost from the bottom. Most cases of cancer of the cervix die of cancer sooner or later, whether a curettage and cauterization together or separately have been performed, the cervix amputated low or high, the uterus removed by the vaginal or by the abdominal route or by both, the broad ligaments and the pelvic glands be removed or not. The result has been the same in spite of the extravagant claims of innumerable surgeons, especially the Germans. A careful reading between lines of recent reports of known and trustworthy men shows that they are having a similar experience to my own. For instance, Penrose says his results have been "most discouraging," and is able to quote but two or three of his patients who have not had recurrence. Kelly's work at Johns Hopkins, as reported by Cullen in his work on "Cancer," bears out this conclusion. A study of these cases (they are the only careful and complete ones of recent origin with which I am familiar) will show how absolutely unreliable statistics are in arriving at the truth if one is to take them only at their face value. It is claimed by these statistics that about 20 per cent of patients out of a total of 73 are cured—of course this means 20 per cent of those operated upon. This is at once a very low claim, as such claims go, but when one studies the tables for a time it suddenly dawns upon one that 68 patients with cancer of the cervix have been refused operation. In other words, the cases upon whom operations have been performed are picked cases. It is at once apparent that this 20 per cent as applied to cases operated upon is one thing, but as applied to cancer of the cervix cured is a totally different thing—as applied to the cases who have applied to Johns Hopkins for relief, the per cent of cures drops at once to about 10 per cent. Even take 10 per cent and consider that this includes every case of possible mistake in diagnosis, and what then? Of course every case in which such a mistake has been made will have no recurrence and would have to be deducted from the 10 per cent of cures. We must consider that all the doubtful and border-line cases come under this heading, even those cases in which there have been few clinical manifestations of the disease and it has been pronounced such from microscopic examination, routine in character, and where probably cancer

had not been even suspected beforehand. Where one has a sublime faith in the results of microscopy, even in the earliest and most doubtful stages of tissue transition to cancer—and who can have the unlimited faith asked of us by some men, when the uncertainties and disputes amongst the pathologists themselves are considered?—one must again make a cut in the per cent of cures, and 10 per cent fades from view as a deception.

Once more to read between lines. Cancer returns after one, two, three, four, or more years. Confine ourselves to, say, two or three years, and call all cases cured who remain well after this time. Of the 15 cases reported cured in these statistics, 7 were operated upon within two years and 2 others within two and a half years. Once again must there be a cut in the percentage of cures, and it is not unreasonable to assume that the statistics of Johns Hopkins Hospital show a cure of 5 per cent or less only, even accepting them at their own valuation.

This has been my own experience in this disease. I can say with absolute confidence that I do not know to-day of even 5 per cent of cures of cancer of the cervix which have passed under my observation. It is one of the darkest chapters which surgery has been forced to record, and there seems little light ahead. If this brief paper will aid in a small way to call attention to the absolute failure of surgery in the past to stay this lesion and to stimulate renewed activity in its study, I would be more than content. And I would reiterate that my belief is firm in the efficiency of a sound and careful study of the clinical manifestations and phenomena as against dependence on the microscope. Of this I shall deal more fully in a subsequent paper.

Dr. J. B. Deaver.—My experience tallies with that of Dr. Baldy. I regard cancer of the cervix as one of the most disastrous conditions which befall women. The earlier these cases are seen the better is the prognosis from the standpoint of treatment. My practice is to employ very radical surgery —by the abdominal route—only in the early cases. I liken this condition to a similar condition of the breast at this stage. It is useless in the latter cases to perform the radical operation when the glands as far as the clavicle have become enlarged. I do the radical operation when I believe the condition to be an adenocarcinoma. If there is any doubt I remove the growth, when, if it proves an adenocarcinoma, the radical operation is advised.

I have succeeded in some instances in removing the glands along the iliac vessels in uterine carcinoma. There are but

few cures of carcinoma of the cervix, and therefore I can indorse Dr. Baldy's statements as far as my personal experience in this matter is concerned.

DR. GEORGE ERETY SHOEMAKER.—I think the general attitude of the profession is one of indorsement of the general view that there are in a great many cases of operated carcinoma of the cervix recurrences sooner or later, even though several years may first elapse. The lesson, however, is not that we should abandon the effort to operate on these cases, but that we should urge upon men who have an opportunity to see them early to send the cases earlier to the operation table. How few cases do we see which are early! I see ten cases of advanced carcinoma to one which is in its initial stage. A change will come only when men shall give up the old idea which has been in the text books that one must wait until there are pronounced cachexia, emaciation, hemorrhage, and odor before a diagnosis of carcinoma can be made. Abnormal hemorrhage alone should call for investigation, but investigation need not mean hysterectomy.

DR. EDWARD P. DAVIS.—There is one aspect of malignant disease of the womb which has not been mentioned—that of carcinoma or epithelioma arising from the chorion or syncytium. In most of these cases there is given a history of incomplete abortion, the malignant disease develops gradually, the uterus is enlarged and evidently the site of disease. In a few cases the womb remains unaltered, but the malignant growth spreads by metastasis so rapidly through the body that nothing can be done to stay its progress. A case of this sort came under my observation recently, in which autopsy showed malignant tumors in the brain, liver, kidneys, spleen, and lungs, while the uterus was unaltered. The patient had pernicious nausea in early pregnancy, and it was necessary to perform therapeutic abortion. This was followed by no improvement, but by progressive failure and death.

In cases where the uterus is enlarged, with a foul discharge and a history of incomplete abortion, the womb should be thoroughly emptied and a septic process excluded. After this, if the patient's symptoms do not promptly subside and malignancy is evidently present, vaginal extirpation of the uterus is necessary.

DR. JOHN G. CLARK.—The results of operation for cancer of the uterus are, at best, unsatisfactory at the present time. We know, however, that there is a very definite percentage of cures resulting from operative treatment, and that so far no other plan of treatment which has been suggested is as satisfactory. While none of us can be too optimistic with regard to the treatment of cancer along operative lines, yet I feel that Dr. Baldy has taken too pessimistic an attitude on this subject. In the first place, he has generalized in his criticisms without coming down to definite statistics. Certainly, in a vital matter of this kind, generalizations are dangerous, for it is the absolute statistics which we seek in order to definitely determine the value of operative treatment. The cases should

be followed from the beginning to the end, from the time of operation until the patient is well beyond the period when we consider that she is healed, or when she has succumbed to the progress of the disease. In this way only can we definitely define the value of treatment.

Dr. Baldy also criticises the German reports. On this again I am inclined to take exception, for the statistics from many of the German clinics are above reproach. If there is one thing in which the German excels it is his careful statistical studies. Only recently Winter, of Königsberg, one of the most scientific of German gynecologists, has given us a splendid statistical review of cases, not only collected from the literature, but also those, which are infinitely more valuable, from his own personal observations. In the latter he has personally examined a large percentage of the cases, and only when the statistics were beyond question has he incorporated them in this report. These results show a large percentage of cures in cancer of the fundus and a very definite percentage of cures in cancer of the cervix. As this article is very comprehensive, I shall hope in the near future to review it *in extenso;* suffice it to say that with the exception, perhaps, of Cullen's very careful review of a series of cases, no American report is equal to it. These cases are extremely satisfactory, for they have been examined clinically, the diagnosis usually controlled by microscopic examination, which, from the ultimate diagnostic standpoint, is the court of last resort. Clinical evidences of cancer certainly, so far as symptoms go, are often very vague or absent. Even in cases where the clinical symptoms of cancer are present we are often utterly unable to arrive at a definite diagnosis, and this end is only reached by microscopic examination.

DR. JOHN C. DA COSTA.—My ideas are much in accord with the gentlemen who have spoken to-night, but I feel that if the percentage of cures is only ten, or even five, those cases are inevitably doomed without operation, and that it is much better that we should save that five or ten per cent than let them die. I know that I have cured cases of cancer of the cervix, but I have had the cases at the beginning. One case, operated on sixteen years ago, is well to-day. At the beginning a cancer can be cured, but after the glands are involved I believe that a radical operation is of no more value than in cancer of the breast when the glands are extensively involved. It is merely palliative, and other palliative operations, much less dangerous than the radical one, can be done.

DR. BALDY (closing).—Cancer of the cervix will inevitably cause death unless something is done, and every patient saved is so much gained. I am in hearty accord that surgery is the only thing to consider with cancer in any part of the body. It isn't the fact of operation on cancer that I speak against; it is the abominable teaching of the day which is turning us back to the middle ages in this matter. These statistics of Winter quoted by Dr. Clark are exactly like those of Johns Hopkins and my own, and, when read between lines, fully sustain my posi-

tion as to the unreliability of all statistics. All statistics on this subject are put together to prove the large number of cases the individual operator saves, and are made to present the best appearance possible. I have shown you how the statistics from Johns Hopkins show an apparent saving of over 20 per cent. of cases of cancer coming to that institution, and have pointed out to you in detail in my short paper how in reality they prove that Johns Hopkins Hospital saves less than 5 per cent of all cases applying. The same test applied to these statistics of Winter shows the same thing. My own experience fits exactly with theirs. The facts are the same from all honest men; the only difference is in the conclusions drawn and the teaching which follows. I hold that any teaching which says that more than 5 per cent of cases of cancer of the cervix are saved is bad. Why, you ask? Because it gives the general practitioner a false sense of security; it deceives him as to his terrible responsibility in making an early diagnosis. The more he is impressed with the terror of this disease the more carefully he will scrutinize his cases and will arrive at an early diagnosis, and will insist on an early consultation and operation even in suspicious cases. Before you can use your microscope, cancer must be suspected. If the general practitioner, who sees these cases first, is not thoroughly educated to make a diagnosis clinically, to recognize the early symptoms and their comparative significance and consider them carefully, we are never going to make any advance. The teaching of the laboratory is doing harm; entirely too much stress is being laid upon it; it is clinical observation that is going to be the salvation of these cases. They will never reach the laboratory if the clinician does not first recognize them. The laboratory is only corroborative. It is not true that there are no symptoms early, as is stated by a recent work on cancer and which is becoming a common teaching. It is due to the ignorance of the practitioner that these symptoms are not recognized. The microscope and laboratory are entirely secondary in consideration to the training of clinical observation. We have a few symptoms which are invaluable in early cancer, and we cannot impress too firmly this fact upon the minds of practitioners that these symptoms can be recognized in a very large per cent of cases, even in the very early stages of the disease, and, what is more, without the aid of the microscope and the laboratory. The present tendency to laboratory teaching is pushing clinical teaching into the background, and I can conceive of nothing more disastrous to the future of cancer of the uterus. Far be it from me to decry laboratory investigation and the microscope—they have their proper place in the teaching centres and in the hands of men equipped for the work—but not one physician in a thousand in the country can do this work, or has time or facilities to do it. Cancer is seen by these men first. Then teach them to be acute in observation and alert in symptomatology and the deductions to be made from the clinical aspect. The microscope is of necessity secondary, and it should remain so.

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Stated Meeting, March 21, 1901.

JOHN C. DA COSTA, M.D., *Chairman.*

DR. W. REYNOLDS WILSON read a paper entitled

REPORT OF A CESAREAN SECTION IN A CASE OF OBLIQUELY CONTRACTED PELVIS.

The record of this case, presenting, as it does, an instance of unusual deformity among the more characteristic malformations of the pelvis, is as follows:

Mrs. S., age 39, a native of Austria, presented herself for examination on the 22d of January, 1900. Her pelvic measurements were as follows: The distance between the spines, 28 centimetres; between the crests, 28 centimetres; external conjugate, 20 centimetres; right external oblique, 23 centimetres; left external oblique, 21 centimetres. The circumference of the pelvis was 102 centimetres. The abdomen was pendulous and its circumference measured 108 centimetres. The transverse diameter at the outlet was 9 centimetres.

The history of the previous labors reveals a condition of progressive deformity, as far as can be gathered from the statement of the patient, and excluding the possibility of a lessened development in the first child, which was the only one successfully delivered. The patient's first delivery occurred in her native land some fifteen years ago, the labor being, according to her statement, normal. The birth of the second child was marked by a complex presentation, the delivery being completed by decapitation and extraction. In her third delivery the breech presented, the child being also delivered by decapitation of the after-coming head. Her fourth child was delivered by forceps, but did not survive.

In August, 1897, the patient entered the Pennsylvania Hospital suffering from a deep-seated abscess in the left lumbar region. This was evacuated under ether, and an examination of the cavity showed several pockets situated deeply in the posterior abdominal wall. The cavity was irrigated and drained. In October following, the patient was again etherized and the twelfth rib on the left side was found necrotic. The rib was removed, and at that time an examination of the anterior aspect of the vertebral column in the vicinity of the

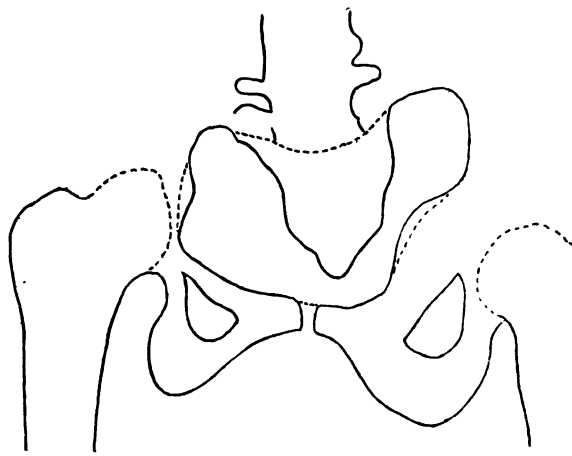
abscess was made by way of the resulting cavity. No vertebral caries was detected. The wound continued to discharge until the end of the following March, when the patient left the hospital. At the time of her recent delivery, about to be described, the patient presented no lateral tilting of the pelvis, no scoliosis, and no impairment of gait. The examination of the patient's urine, made some time after delivery, revealed the absence of tubercle bacilli.

Labor began on January 26. Partial dilatation of the os took place promptly, although obliteration of the cervix was slow. The membranes were intact. The vertex presented, and the fetal heart was discovered in the left iliac region. As labor progressed the head refused to engage and remained freely movable above the inlet. At 10:25 A.M. on the following day the membranes ruptured spontaneously. The amniotic fluid was not discolored. Cesarean section was selected as the best means of delivery, and the time for action was governed by the condition of the mother's pulse and the fetal heart.

A classical Cesarean section was performed. The uterine incision was stitched with fine silk and the abdominal wall with silkworm gut. A living child was extracted weighing nine and a half pounds. The puerperium was interrupted by the occurrence of a pelvic exudate which distended the cul-de-sac, giving rise to mild systemic infection and accompanied by the presence of streptococci, found within the vagina. The infiltration was absorbed spontaneously, and the patient was discharged in good condition six weeks after operation.

The character of the labor, the abnormality of the pelvis, and the skiagraphic tracing of the deformity show that the dystocia was such as to be relieved only by Cesarean section. The previous history of the case relative to the lumbar abscess at first directed our attention to the possibility of a secondary tuberculous inflammation of the iliac synchondrosis. The history of progressive deformity leading to more and more difficult deliveries also pointed in this direction. To exclude tuberculous disease, the study of the case was directed toward investigation of the following points: (1) the absence of scoliosis from spinal caries; (2) the absence of hip-joint disease and lameness; (3) the negative history of spinal caries, the origin of the abscess being due to a necrotic rib; (4) the negative results in the examination of the urine as to the absence of tubercle bacilli, this point naturally bearing upon the possibility of tuberculous abscess originating in the kidney.

It was therefore probable that the deformity was not due to tuberculous inflammation. It remains, therefore, to differentiate, in the consideration of the deformity, between (1) an early inflammatory condition progressive in character, (2) a condition of rickets, (3) a condition of osteomalacia with restoration of the bony structure. As to the last-named condition, it seemed proper to exclude its presence in this case, principally from the fact that we were dealing with an obliquely deformed pelvis, an unusual deformity resulting from osteomalacia, as well as from the fact that the separation of the ilia in the present case is greater than would be found in this disease. Before considering the first two possible causes, however, it is proper to note that not only an oblique



Skiagraphic tracing of deformity (reduced to one-ninth original size).

deformity of the pelvis was present, but that the lateral capacity of the pelvic cavity and inlet was also reduced, as shown by the skiagraphic tracing. This fact has an important bearing on the diagnostic aspect of the case, which will be referred to later.

As to the question of early inflammation independent of rickets, it is possible to have, according to Olshausen, a primary inflammation resulting in synostosis with shrinkage of the wing of the sacrum and distortion of the pelvic inlet from pressure. In such cases osteophytes are to be found in the region of the inflammation, together with thickening of the bony structure. The atrophy of the sacral wing is a secondary condition and arises from the interference of nutrition by

inflammatory closure of the nutritional foramina. In the case under discussion no such thickening was detected.

As to the presence of rickets, to establish this as an etiological factor it would appear necessary at first sight for us to find in the case a greater degree of dystocia in the patient's first delivery, if her history be correct. It seems, however, fair to take into consideration this fact—namely, that a condition of rachitis in early life may have existed in a moderate degree and may have acted as a predisposing cause of a later inflammation which increased the deformity.

As to the reduction in the general diameters of the inlet, irrespective of the oblique deformity of the pelvis, the probability of rickets is established by this fact. The asymmetry of the pelvis is not opposed to such a view, as the rachitic pelvis may become distorted through pressure even in the absence of inflammation. The presence of rickets, therefore, would mean that original deformity had existed affecting the iliac synchondrosis, and followed either by the unlikely presence of tuberculous inflammation or by secondary displacement from pressure. In either case the progressive nature of the deformity would be explained. The probabilities, however, in the present case would point to the latter hypothesis, as the configuration of the pelvic joint affected revealed by examination no evidence of irregularity or hyperplastic bony deposit.

Still another hypothesis must be considered—namely, the congenital absence of the centre of ossification in the wing of the sacrum. In such case the affected side of the sacrum is necessarily arrested in its development and the pelvis assumes an obliquely distorted shape. Synostosis in such instances is not an absolutely necessary result, but it occurs frequently, inasmuch as the cartilage is either poorly developed or through pressure is absorbed, so that the bones, as a result of their intimate contact, become united.

In considering the diagnosis in general of oblique deformity, it is not uncommon for the presence of obliquity to be overlooked prior to labor. In this connection the external measurements of the present case are significant. The progress of labor is apt to be interfered with at an early stage, and the arrest of the head in lateral deflection above the inlet is observed. In measuring the pelvis the irregularity of the measurements between the posterior spines of the ilium and the spinous process of the last lumbar vertebra is to be noted.

By internal examination a difference is observed in the distance between the ischial spines and the corresponding edge of the sacrum. There exists also an asymmetry of the entrance to the true pelvis, due to the distorted outline of the inlet. The promontory of the sacrum is not directly opposite the symphysis, but faces the innominate eminence of the affected side.

As to the recognition of the deformity in the case under discussion, previous to delivery the position of the head showed characteristic non-engagement, with lateral deflection and extramedian position of the vertex. The tendency to engagement was with the occiput toward the left, showing the inability for the head to enter the inlet, inasmuch as its sagittal suture was coincident with the shorter oblique diameter; for it is characteristic of this deformity that the oblique diameter, measured from the point of synostosis to the opposite innominate eminence, is greater than the oblique diameter measured from the unaffected side. Internal examination of the pelvis showed that both the left tuberosity and ischial spine were nearer the median line, the inward displacement of the lateral wall of the true pelvis corresponding to the acetabulum on the affected side—namely, the left. The transverse diameter of the pelvic cavity at a point on a level with the acetabula measured but three inches, whereas the skiagraphic tracing shows a transverse diameter of four and one-half inches at the inlet. All these points bear directly upon the diagnosis of an obliquely contracted pelvis.

In conclusion, the classification of this pelvis, according to its morphology, should scarcely be that of a Naegele deformity, as the synostosis and shrinkage of the sacral wing found in the latter are not represented in this instance. The moderate degree of contraction, however, together with the outward flanging of the crests of the ilia as represented by the external measurements (the interspinous and intercrystal diameters being equal), point to an original rachitic deformity preceding the oblique distortion.

Dr. Edward P. Davis.—Within a short time we have had at the Jefferson Maternity two cases of obliquely contracted pelvis in which the deformity resulted from disease or accident which prevented the patient from walking during early life. In the first of these, at 14 years of age, the patient suffered from disease of the right knee joint, probably tuberculous. She was put at rest for some time and obtained partial recovery with stiffness. As she was unable to work, the

joint was excised, and she recovered with complete anchylosis. When under my observation she was about 20 and pregnant for the first time. The right lower extremity was considerably shorter than the left, the mobility of the two hip joints was normal, the pelvis was obliquely contracted to three centimetres but otherwise well developed. On examining the patient internally, it was found that the contraction would probably not prevent the passage of the fetus in the normal oblique diameter. At labor the child passed through the pelvis spontaneously, utilizing the larger oblique diameter at the brim. There was no typical mechanism of labor, and the variations in the mechanism were of decided interest. The second case was of lesser degree and resulted from injury to the hip. The patient was able to bring the head of the child into the brim of the pelvis, when delivery was completed by forceps.

In two cases of disease of the sacro-iliac joints obliquity of the pelvis was present, but not to a degree sufficient to prevent the passage of the child through the pelvis.

A direct injury attended with violence may produce an irregular obliquity of the pelvis which would prevent the spontaneous expulsion of a living and viable child. A woman when a young girl had fallen from a tree and fractured the neck of the femur, the head of the bone splintering the pelvic bone. She recovered, with fairly good use of the lower extremity, but the pelvis was obliquely contracted. It was necessary in her case to induce labor and to deliver the patient with forceps.

The physician must not forget, in cases of obliquely contracted pelvis, it is not unusual to find the pelvis narrow and deep. This must be taken into consideration in determining the question of treatment. The pelvis must be carefully examined externally and internally, and the probability of the passage of the fetal head, as well as its engagement in the brim of the pelvis, should be taken into account. While most of these patients are delivered without great difficulty, some require the induction of labor or delivery by abdominal incision. Symphyseotomy is not indicated in obliquely contracted pelvis.

Dr. George M. Boyd.—I have had one case of extensive deformity in the oblique diameter of the pelvis. The case was one in which there was an early developing coxalgia which made it necessary for the patient to go on crutches for five or six years. The patient had had a craniotomy, and presented herself at the hospital in her second pregnancy at term. She fell into labor with the head remaining at the inlet of the pelvis, immovable. After the test of the first stage of labor, and with the history of craniotomy in the first delivery, it seemed wise to deliver the patient by abdominal section. There was no attempt at engagement of the head, and the deformity was sufficient to make the operation an absolute one.

The cases which I feel give us the greatest concern are those of moderate oblique deformity, where probably the indi-

cation of Cesarean section is only relative. In such cases it is important to give the patient the benefit of the test of the first stage of labor.

DR. B. C. HIRST.—I have seen a number of oblique deformities of the pelvis, but not one as yet that was due to a lack of development of the ala of the sacrum or to fracture of the pelvis. Every case has been spontaneously delivered, or delivered with nothing more difficult than a forceps operation, so that, unless the woman had a true Naegele's or a fractured pelvis, I should hesitate to undertake a much more radical operation until I had given ample opportunity for labor pains to be operative some hours, to see if spontaneous delivery would not occur. In my experience obliquity from scoliosis or from unequal pressure of the thighs on the pelvis produces a deformity striking enough, but one which has not proved a formidable obstacle in labor. I am well aware that oblique pelves may sometimes complicate labor and be insurmountable obstacles, but the vast majority of them are, I think, not serious complications.

DR. B. C. HIRST read

SOME CLINICAL MEMORANDA.

I. PARTIAL HYSTERECTOMY FOR PUERPERAL SEPSIS.
II. OVARIECTOMY COMPLICATED BY ANEURISM OF THE AORTA.
III. THE REPAIR OF LACERATED CERVICES AFTER LABOR.

The following is simply a series of brief clinical notes of interesting cases:

1. *Partial Hysterectomy for Cases of Necrosis of the Uterus due to Streptococcic Infection.*—For some years past I have encountered cases of infection of the uterus in which the uterine body has been softened to the consistence of cheese, so that no ligature will hold in it, and it is possible to pinch it through with the thumb and forefinger.

On bacteriological and microscopical examination the uterine substance has been found swarming with streptococci, and there has been extensive necrosis of the tissue. It is obvious that no patient can live with this condition of an organ in the abdomen, and the only hope for her lies in its removal. I was for some years in the habit of doing complete hysterectomy for these cases, with a success that I think must be called gratifying when we consider the nature of the case and the condition of the patient who is subjected to a serious major operation. I have had three such cases in the last two months. In one the necrosis of the uterus was so extensive that it was necessary to take the whole organ out. The patient was desperately ill, and had been so for four weeks since her con-

finement. She had, in addition to the necrosis of the uterus, a large, foul-smelling abscess in Douglas' pouch and also infiltration and infection of the mesocolon of the whole sigmoid flexure, which was thickened to more than an inch and had multiple abscesses scattered through it. I anticipated the woman's death. Postmortem examination showed the stump healthy, the pelvis in a satisfactory condition, but the whole mesocolon had broken down into abscesses and all the blood vessels in it were infected. The case was hopeless from the first.

Two other cases within this same time recovered, and I think the form of operation had something to do with the recovery. In both there was necrosis of the fundus uteri and of one cornu which corresponded with the infected tube and broad ligament. It was possible to get rid of all infected tissue by excising the tube, ovary, broad ligament, the cornu of the uterus, and the whole fundus by a wedge-shaped excision. The operation was not difficult. It was done more quickly than the hysterectomy could be done, and I think with less shock.

One of the cases, in addition to the necrosis of the uterus and infection of the tube, had a perforation of the bowel about the size of a quarter of a dollar. The lesion in the bowel was repaired, but, as so often happens when surgery is done on the intestines in a bad condition—that is, when the walls have partially sloughed—the stitches did not hold. The intestinal wound gaped open, and the woman had a fecal fistula, but is now recovering and will eventually get well. Her condition is excellent some three weeks after the operation. Gauze and tube drainage was of course employed.

These two cases are the first in which I have done this partial hysterectomy for puerperal sepsis. I think other cases will give me an opportunity to repeat the operation, and I offer as a suggestion the partial hysterectomy of these necrotic uteri, instead of a complete hysterectomy, as a quicker, easier, and less shocking operation in the surgical sense, and one, therefore, that ought to give us a larger proportion of recoveries in the kind of women upon whom we must operate.

2. *Removal of a Large Ovarian Cyst from a Woman with Aneurism of the Arch of the Aorta.*—I operated recently upon a woman with a large aneurism of the arch of the aorta bulging out the chest wall to a considerable extent. The woman was advanced in years, over 50 years of

age. Her physician viewed the operation with great anxiety, and before the patient took ether he assured her that she had not three chances in a hundred of coming out of the ether alive. She demanded the operation, and I was willing, as it offered her the only chance for life. She had had the ovarian tumor for five or six years; the aneurism, I think, for sixteen.

She had seen a number of gynecologists, who had refused operation. A diagnosis of fibroid tumor had been made in her case, and the operation was declined on this ground. The operation proved the condition to be simply a multilocular ovarian cyst of considerable size. The patient made an uncomplicated recovery. One feature of interest was the fact that the multilocular ovarian cyst was intraligamentary and had no pedicle. It had to be shelled out. A large raw space was left in the pelvis, which I covered over by a peritoneal flap obtained by the enucleation of the tumor. Drainage was effected by a puncture in the vaginal vault. A strip of gauze was placed in the tumor cavity and led out through the vagina. A flap of peritoneum was sewed over the gauze, so as to exclude the infection of the peritoneal cavity and to make the drainage extraperitoneal. There were many ounces of sanguinolent fluid discharged from the drainage tract in the ten days following the operation, and the patient made a perfectly afebrile convalescence.

3. *The Repair of Lacerated Cervices directly after Labor.*—Lusk advocated primary repair of lacerated cervices. I did not feel, when I first read this statement, that it was good advice, but in order to test it I conducted a series of operations upon lacerated cervices at various stages after labor, and I have now come to a definite conclusion which I cannot help feeling is correct. The primary operation directly after labor is not satisfactory. This result might be expected in view of the conditions. The cervix immediately after labor is enormously enlarged. It is edematous, tremendously stretched, and stitches put in it at that time hang like earrings three days later. One cannot expect good union of denuded surfaces under these circumstances, and it is not surprising to find a considerable proportion of primary repairs of the cervix turning out unsatisfactorily. One side perhaps unites and the other does not. It is possible often to get a perfect result, but success is not uniform, and therefore I do not think the operation worth while at this time. After two weeks there is the same certainty of success that there is in secondary operations.

Aside from the advantage of waiting if an operation is necessary, one finds, by the observation of a considerable number of these injured cervices, most excellent spontaneous repairs occasionally, even in the most extensive injuries. I have had made a series of colored drawings at different stages after labor. The first one is taken from a woman directly after a difficult forceps operation. The cervix was enormous. It could be drawn a considerable distance out of the vulva. It was edematous, bruised, hypertrophied. It was easily sewn up, but the operation did not succeed. A few days after the operation the stitches hung like earrings in the tissues.

The next drawing shows a laceration of the cervix four days after labor. Even at that time involution had so well advanced that if the operation were done then success would be almost certain. The only disadvantage about an operation at this time is the quantity of lochial discharge.

The next drawing shows the appearance of the cervix one week after labor. Involution is well enough advanced, but there is a slight septic exudate which deterred me from operating. If infection occurs upon the cervix an operation is naturally likely to be a failure. The operation should be postponed for another week.

The next drawing represents a cervix badly torn. Repair was made at the end of two weeks with a perfect result. I simply had to scrape the raw surfaces, insert the sutures, and perfect restoration was secured. The appearance now is that of a normal cervix. At the end of four weeks the patient was perfectly cured of her cervical tear and had entirely recovered from childbirth.

The final picture represents a cervix three months after labor, showing perfect cure by natural repair of what was originally an extremely bad laceration. No operation was performed, and, as time has shown, no operation was necessary.

In my judgment these operations on the cervix ought not to be performed immediately after labor. Operation should be postponed for at least four days; better, on account of the lochial discharge, for nine days or two weeks. Then, if the laceration is bad, it should be repaired. The woman then recovers from the repair of injury and the childbirth at the same time.

The laceration of the cervix is accompanied occasionally by coincident laceration of the perineum, in which case we might

hesitate as to the best course. I have usually let the perineum go, when I have decided to operate upon the cervix, for two weeks, and have operated upon both together. In a private case, where the element of time is not so important, I might not operate for four weeks. I think very often it is an advantage not to sew up the perineum immediately, and that better work is done and more secure and permanent repair is obtained by delaying the operation. If, therefore, I should have to put off a perineal operation for two weeks in order to do a cervical repair at the same time, I should feel that the woman had suffered no disadvantage from the delay. On the contrary, the perineum would be repaired by a formal, careful operation on the operating table under ether, and the work would probably be rather better done than it usually is directly after labor.

DR. W. REYNOLDS WILSON.—Without differing with Dr. Hirst, whose preference, as I understand it, is for the later primary operation, I should be inclined to entertain some doubt as to the result of stitching the cervical laceration as early as the fourth day after delivery. The chance of local infection of the wound surface appears to me a disadvantage. In addition to this, involution at this period is always an unknown quantity; the placental site may be the seat of unorganized or septic thrombi, which, by reason of the traumatism of such operation, notably the traction upon the cervix, may become dislodged, giving rise to a pyemic process.

DR. STRICKER COLES.—I have been much interested in the report of Dr. Hirst's cases, especially in the one of necrosis. I have always felt that when we have a case of sepsis we never know when we have necrosis of the wall. I recently saw a notice of an article in the *British Medical Journal* giving a report of four or five cases of necrosis of the wall of the uterus. In curetting such cases there is always danger of perforation of the uterus. I believe also that many cases are perforated in such a condition. I have never seen such a case, but have been on the lookout for one. I think Dr. Hirst's method of partial hysterectomy is very good. I believe also that after a long labor, when the cervix is edematous and the vitality of the tissue very poor, you will not get good union until after involution. In one case in which there was total failure the cervix was elongated and protruded from the vulva. After labor the cervix was badly torn, and the operation was as much outside the body as in; every stitch could be seen. In the majority of cases I always suture after labor, and usually the result is good. Of course, if the result is not good, two weeks afterward a secondary operation could be done. I do not think primary operation has done any harm. I prefer to sew up the pelvic floor primarily. In two

weeks there will not be much contraction of the muscle. If the sphincter is torn the tendency will be to retract. I have had very good results in the hospital and outside.

Often I think if you do this operation at once you get good results, whereas if it is put off the chance to do it will not be given. I would therefore try to get the result at the time of labor. In those cases which have been in labor a long time the tissues are bruised and you will not get a good result, but then, of course, operation can be done at the end of two weeks.

DR. EDWARD P. DAVIS.—Dr. Hirst's resection of the septic uterus might easily become an almost entire hysterectomy. Clinical observation shows that necrosis of the puerperal uterus is very often present at the fundus and that almost the entire fundus may be softened and thoroughly broken down. In such a case the removal of the necrotic tissue would leave a stump of uterus at the lower uterine segment, which would be a practical hysterectomy. The one point in favor of such a procedure in contrast to complete hysterectomy is the fact that shock would be less, the danger of infection of freshly opened tissue would be less, and that the risk of hemorrhage would probably be less.

My experience with immediate closure of the cervix has not been unfavorable. Where hemorrhage occurs from a badly torn cervix, one or two stitches on each side stop the hemorrhage and are usually followed by union. In some cases of induced labor where it is necessary to dilate the cervix artificially, considerable laceration may occur; in several instances in my experience complete union has followed suture. Possibly the cervix before full term is less likely to become edematous and in a better condition for immediate union than later in pregnancy. I have not been able to trace infection to immediate closure of the cervix. I should prefer to close a badly torn cervix by uniting the greater part of the torn tissue, not attempting a complete operation; and if union did not follow, it would be best, I think, to operate later. Regarding the choice of a time for closure of the perineum and cervix, we must decide in accordance with the condition of each individual case. Involution should be well advanced and lactation well established. There is always the risk that the operation may disturb lactation in a sensitive patient.

The objection urged against immediate operation upon the cervix after the tissues contract and after the sutures are found loosened and not holding is an object which must be recognized by all. There may be something in the choice of suture material for the immediate closure of the cervix. Thoroughly chromicized catgut has given me satisfactory results in these cases.

DR. GEORGE M. BOYD.—I would like to ask Dr. Hirst how long after delivery he performed these operations (partial hysterectomies).

DR. B. C. HIRST.—The operations were performed between four and five weeks after delivery.

DR. BOYD.—Sometimes the operation is not performed until more than a month after delivery and with the infection localized. Operative interference early in the puerperium proves serious.

As Dr. Davis suggests, I have more than once put in one or two stitches to control hemorrhage in a lacerated cervix. I have not made it a rule to close the cervix immediately, although I have always felt it wise to perform immediate repair of the perineum.

I think Dr. Hirst's suggestion to repair the injury before the obstetrician loses sight of the case is a good one, but it seems to me wise to wait even longer than two weeks. The uterus is not well involuted at that time, and it is possible to get even better results by waiting longer.

DR. H. D. BEYEA.—The cases which Dr. Hirst reports are very interesting and represent, it seems to me, what every one sees now and then. I think the class of cases that do get well when any operation is done are those operated on early. I have seen two cases of this sort, one in which microscopic study of the uterine wall showed streptococcic infection of the entire uterine wall. These cases were saved by hysterectomy.

I have seen cases four or five weeks after delivery in which there was what I think Dr. Hirst means by necrosis. There was infection by streptococcic organisms, formation of pelvic abscess, and tubal abscess on one side. Hysterectomy was done, and I have seen such cases get well. The temperature is not high. The organisms seemingly lose their virulence. Had not the abscesses been opened early there would have been general peritonitis and death.

I have had no experience in the repair of the cervix immediately after labor, that having been confined to repair of the perineum. I have operated upon a woman who had for hours before delivery occipito-posterior position, and in which there was a rotation into the hollow of the sacrum. The perineum tore through to the sphincter, and the septum was torn as high as the cervix. I did immediate repair and got a good result. My experience in regard to the sutures in early operation on the cervix is much like that described by Dr. Hirst, and I have resolved not to operate immediately after delivery, but to wait for at least six or eight days, possibly two weeks.

DR. JOHN B. DEAVER.—Dr. Hirst's paper suggests to me one or two points. It has been my lot to see a number of post-puerperal septic cases after miscarriage and abortion in the first three or four months. I have recently had under my care three cases of post-puerperal septic peritonitis. All three were operated upon promptly and all three recovered. In two of the cases I found the pelvis full of mucilaginous material which I believe in a short time would have become pus. In the third instance there was pure pus. In one case of a young girl with salpingitis, thorough cleansing and massage of the Fallopian tubes, instead of extirpation, was accomplished, and the patient recovered very promptly. I do

not see the late post-puerperal sepsis. I am aware of the insidious nature of the infection and believe in prompt interference. Upon slight evidence of peritonitis I would open the abdominal cavity, and if nothing is wrong no harm will have been done.

Personally I have little faith in the use of intraspinal cocaine anesthesia.

Cases of intraligamentary cyst like that reported by Dr. Hirst are cases for enucleation. If they are of long standing, if there is much inflammatory action and they are densely adherent, we meet with more blood vessels than under ordinary circumstances, and bleeding is sometimes hard to control. I approve of Dr. Hirst's plan of packing off the vagina and closing a peritoneal flap, making drainage extraperitoneal. I have drained through the abdominal route by drainage tube and packing with gauze. The probability is that Dr. Hirst's is the more satisfactory, particularly so in regard to the cleanliness of the vagina secured.

Dr. John H. Girvin.—In the repair, immediately after labor, of a lacerated cervix it seems to me that very great care should be exercised in the selection of cases to be operated upon. I think it is a mistake to teach that all lacerations need immediate repair. The cases of laceration of the cervix which produce the worst results are those in which the tear extends into the vaginal vault, where the lower part of the broad ligament is affected, and in almost all of these cases we ultimately get pain and tenderness. Here there is no danger of interfering with drainage; immediate repair is feasible. It saves the woman many weeks of decided discomfort if we can avoid having an amount of scar tissue form in the lower part of the broad ligament. In those cases where there is a large amount of bleeding at the time of labor immediate repair will benefit the patient, and there is more likelihood of healing than when the tear is in the lower part of the cervix only.

As to the question of sewing up after two weeks, which may be called an intermediate operation, I think the danger, under ordinary circumstances, of interfering at this time with the position of the uterus and stretching the broad ligaments, unless great care is taken, is greater than if the operation is done earlier or later.

Dr. Hirst (closing).—In reply to Dr. Davis I would say that silkworm gut was used uniformly.

The intraspinal cocaine anesthesia was urged in the operation for ovarian tumor, but from inquiries which I had made I had been deterred from using it. I was told by one gentleman, who had acted as the medical expert in two cases, that during the spinal anesthesia he considered the patients desperately ill, the heart action being extremely bad. You cannot say that of a patient under ether. Dr. Judd, who is the anesthetizer in all my operations, rarely uses more than three ounces of ether. In the case of aneurism not more than three and one-half ounces of ether were used, and I am confident

that the woman did better than would have been possible under spinal anesthesia. That method does not appeal to me very strongly. Ether well administered by a good anesthetizer, with oxygen, is, I believe, much safer.

DR. R. P. MCREYNOLDS reported a case of

RUPTURED INTERSTITIAL ECTOPIC GESTATION.

This case was brought to the Presbyterian Hospital March 10. Through the kindness of Drs. Duer and Girvin she came under my care. I shall read the history, not because it is an unusual one, but, on the contrary, because it is almost typical, embracing as it does every symptom and sign of the disease.

Sarah H., white woman, age 23, has had two children; the last one, 10 months old, she is still nursing. Five months after last confinement she began to menstruate and was regular for three months; she then missed two periods—except at the last one she saw a few drops of blood. She has had some morning sickness during the past two months, and felt that there was something wrong, but did not feel as she felt when pregnant before. She has had no sharp pain at or between the times for her regular periods.

On March 8 she got out of bed at 5 A.M. to get a glass of water. On getting back in bed she noticed a sudden, sharp, severe pain in lower abdomen on the right side. This pain continued all day. Any attempt to draw up legs or raise the head caused excruciating pain. The next day, March 9, pain was somewhat less, but she was very pale, temperature subnormal and abdomen commencing to swell, bowels were constipated, and she could eat nothing.

When I saw her at 9 P.M. March 10 the abdomen was much distended, tympanitic and tender all over, especially so in the right iliac fossa; breathing was hurried and difficult; pulse soft and 136 to the minute; face anxious; mind clear. Vaginal and rectal examination showed a soft mass behind the uterus in cul-de-sac of Douglas, more pronounced upon the right side. Cervix uteri soft. Uterus could not be mapped out on account of the abdominal distension.

On opening the abdomen we found the peritoneal cavity filled with bloody serum and clotted blood. The uterus was about twice the normal size, and at the left cornu there was a ruptured gestation sac Conception had evidently taken place just within the uterine end of the left tube; in its growth the sac had involved a portion of the fundus of the uterus. We tied off the ovarian artery and removed the left tube and ovary. By wedge-shaped incisions we cut the diseased tissue composing the gestation sac from the fundus. and the edges of the resulting wound were approximated by interrupted silk sutures. The fetus, which was floating among the intestines, and all blood clots were removed by flushing out with normal salt solution. The abdominal wound was closed without

drainage by through-and-through sutures, the peritoneal cavity being filled with normal salt solution before closing. About twelve hours after operation the woman died, seemingly from a pulmonary embolism as the immediate cause of death.

The after-treatment of this case would seem to be an ideal one for intravenous injection of normal salt solution. Consequently, about ten hours after the operation, when she began to be very restless and show signs of failure, the resident physician injected one thousand cubic centimetres of normal salt solution into the median basilic vein. The result was the pulse became weaker and more rapid, respirations deeper and more sighing, temperature rapidly went up; she lost consciousness and died three hours later.

I have not had an opportunity to look up the records of very many cases where intravenous injections of normal salt solution have been given, but I have found a few: in one (a case of pneumonia) the patient died while it was being given; in another (typhoid fever) the temperature went from 100⅘° to 107⅗° a few hours after the injection; in another (a case of crush of leg) temperature went from subnormal to 104⅕°; in another (a pneumonia case) temperature went from 100° to 102° and patient died five hours after the injection was given.

Of course these are very few cases to draw a conclusion from, and all were desperately ill when it was given, yet I believe intravenous injection of normal salt solution is accompanied by some danger and should not be indiscriminately resorted to. I think it would have been better, in this case at any rate, if we had kept her quiet by the hypodermatic injections of morphia and allowed Nature's workshop to repair the damage.

In looking up the literature I find that a number of cases of interstitial ectopic gestation have been reported. The greater portion of them have ruptured externally and the fetus expelled into the peritoneal cavity, but a few have ruptured into the uterine cavity and the fetus expelled through the vagina.

The mortality seems to be higher in the interstitial form than in any other form of tubal pregnancy.

Dr. B. C. Hirst.—I think the interstitial form of extrauterine pregnancy must be distinctly rare. I have operated on 42 cases of tubal pregnancy, and of that number only one might be justly called interstitial, and in that case the ovum did not involve much of the uterine structure. It was mainly in the uterine extremity of the tube. I have therefore no personal experience with this form of extrauterine pregnancy. I think Dr. McReynolds' operation was a most appropriate one for such a case, and is the one I feel I should do myself if called upon to deal with such a case.

As to the submammary injection of normal salt solution, it seems to me it is quite as efficacious as the intravenous or the intra-arterial and freer from danger. I should choose the radial

artery rather than a vein, because the fluid would not so immediately be thrown into the heart, and I think the risk would be less; also, there is not the same danger of air embolism in the arterial injection as there would be in the venous.

DR. EDWARD P. DAVIS.—In connection with Dr. McReynolds' case I may describe a case of interstitial pregnancy in which the ovum was lodged in the right cornu of the uterus and in which rupture occurred. After the removal of the ovum and blood clot it was very difficult to check the hemorrhage from the uterine wall. The condition of the patient was so desperate that there was not time to excise the uterine wall. Hemorrhage was checked by the application of the thermocautery to the bleeding surface and by the insertion of several silk stitches. Gauze was packed about the site of operation, and a gauze drain brought out at the lower end of the abdominal incision. In this case very copious intravenous saline transfusion was practised during the operation. The patient's life seemed to have been saved by this procedure. It is my custom, in all operations of gravity, to have the apparatus ready for intravenous transfusion and an assistant who can perform it. The transfusion is done during the operation, just before the application of the dressings or while the dressings are being applied. The advantage of very prompt transfusion is great. The patient is under control; the fluid introduced restores the equilibrium of the circulation, which has been disturbed by the operation, before extensive changes in the tissues have taken place. In Dr. McReynolds' case the late performance of the transfusion may have been an element in producing the unfavorable result.

DR. JOHN B. SHOBER.—I am entirely in accord with Dr. Hirst in regard to the value of submammary hypodermoclysis and employ it in all my operative cases attended by shock or extensive loss of blood. The results have been most satisfactory. The temperature of the solution should be 120° F. and the breasts should never be over-distended. The amount of fluid the tissues will absorb in this way is astonishing. A quart under each breast can be given in about three-quarters of an hour. This may be repeated as frequently as may be desired. The response is usually prompt, the pulse becoming stronger and steadier during the procedure.

In desperate cases perhaps quicker results may be obtained by intravenous transfusion of normal salt solution. This method is particularly applicable in cases which have been attended by great loss of blood. Some time ago I adopted the plan of filling the abdominal cavity with normal salt solution before closing the wound. The patients react more promptly from the operation, there is less ether nausea, and they complain less of thirst. When drainage is used, instead of leaving the solution in the abdominal cavity, I order a quart of normal salt solution to be given by high rectal injection before the patient comes out of the ether.

DR. H. D. BEYEA.—I operated upon one case last year in

which the pregnancy was not at the uterine cornu, but at the tube. I passed a ligature around the uterine cornu, checked the bleeding, and the patient recovered.

I have here the temperature chart of a case operated upon on the 15th of February. I saw the woman in the eastern part of the city one afternoon about 4 o'clock. She had been taken with pain on the left side and was almost pulseless. Her physician gave her hypodermoclysis immediately afterward, and when I saw her the pulse was about 180°. I had her sent to the University Hospital, and operation was performed immediately. Hypodermoclysis was performed during the operation and all sorts of stimulation administered. One fifth of a grain of strychnia was given within the first hour. This was given by mistake and seemed to do a considerable amount of good. The patient made a normal convalescence and left the hospital yesterday.

DR. DEAVER.—I take great pleasure in speaking in favor of intravenous injections of salt solution. I think it one of the greatest boons that surgery has at the present day. I do not mean to say that it is not attended with great risk. I am very careful not to allow the house doctor to do it for the first time, except under my immediate supervision.

Before the day of the intravenous injection of salt solution I used the submammary method and by the rectum—seldom the former, which I think is attended by more risk than the intravenous injection. It is necessary, of course, to exercise very great care. Dr. Hirst has spoken of air embolism. To prevent this it is necessary to have the fluid running as the canula passes into the vein. The injections are indicated in cases of primary and secondary hemorrhage. I have seen good results, too, in cases of septic conditions, from this intravenous injection of solution. I do not say that the cases would not have recovered without the use of the injections, but with them we have had amazing results. I have operated upon patients almost pulseless, which with the injection showed a pulse of 96. I have used the extrajugular vein, and if there was occasion would not hesitate to use the common femoral. My experience has been very good indeed. I think, could we have the expression of hospital surgeons who see the more desperate cases, all would bear witness to the fact that it is one of the greatest agents that we have. I think an agent which is much overrated is strychnia.

In my experience the best results in intravenous injections have been obtained when the injections are given early.

DR. JOHN H. GIRVIN.—I had the pleasure of seeing this case and of assisting Dr. McReynolds and I considered it particularly interesting from several points, especially because it presented all the typical symptoms of a ruptured ectopic pregnancy. I was struck particularly with the condition of the abdomen when I saw the woman half an hour before the operation. It was quite characteristic of a collection of blood in the peritoneal cavity. The gestation sac seemed to be formed from

uterine tissue completely. There was certainly not more than half an inch of the tube involved in this sac, which seemed to extend out from the cornu of the uterus. For nearly seventy-two hours after the time of rupture the woman's pulse was in good condition for the amount of blood lost.

DR. MCREYNOLDS (closing).—In cases of acute hemorrhage I think we get the best results from intravenous injection of salt solution. In cases such as this, where there was bleeding for seventy-two hours, the whole system undergoes a change and the heart has adapted itself to the change. The intravenous injection, then, of a large amount of normal salt solution I think may do harm. It may give a chill and cause death from shock. This, I fear, is what took place in this case.

Stated Meeting, April 18, 1901.

JOHN C. DA COSTA, M.D., *in the Chair.*

DR. R. G. LE CONTE presented a paper on

THE VALUE OF HEGAR'S SIGN IN DIFFERENTIATING PREGNANCY FROM UTERINE MYOMA.

I think we have all seen several cases of myoma of the uterus in which, by physical examination alone, it was scarcely possible to tell whether pregnancy existed or not. Such myomata are usually single, partly interstitial and partly submucous, containing comparatively little fibrous tissue, so that they feel soft, smooth, and rounded to the touch, and of a size resembling a uterus pregnant from the second to the fifth or sixth month. If, besides the enlargement of the uterus, other signs of pregnancy are wanting, or so illy developed as to be unreliable, and your patient has intentionally or unintentionally misled you in her symptoms and previous history, can you from a manual examination alone differentiate these two conditions? It is held by many that the only positive sign of pregnancy is the fetal heart sounds; but these sounds do not develop until the sixteenth or eighteenth week, and in some cases cannot be demonstrated until a much later period. Must we then, in these doubtful cases in a hospital service, always wait until such time as we can positively say that the fetal heart sounds are present, or that owing to their absence pregnancy cannot exist? To do so would possibly save us from error; but it is often very inconvenient or impossible for the poor to wait, and your reputation and the institution's suffer if the patient leaves and applies elsewhere for treatment. Under these conditions many patients have been operated upon where strict prudence should have cautioned us to wait. Whatever the causes may be which lead us to believe we are dealing with a fibromyoma, how changed are our thoughts when we open an abdomen and see before us a womb resembling in appearance and touch a pregnancy! I will not attempt to depict these thoughts, for they are of no value; but I have seen surgeons proceed to amputate the uterus under these conditions, and then have the specimen hurriedly re-

moved from the operating room, fearing that the products of conception might appear on opening the uterus. It is of such cases that I wish to speak, where even after opening the abdomen there is a doubt in the mind whether the uterine enlargement is physiological or pathological, and to discuss with you in this connection the value of Hegar's sign of pregnancy.

The vaginal portion of the cervix cannot positively be relied on for a differential diagnosis. This is notably softened in pregnancy as a result of the increased blood supply, and perhaps also owing to some edema of the part. But the same condition may also be present in a rapidly growing myoma, particularly if metritis be present. Again, as the result of injury at previous labors, scar tissue may be so prominent in the cervix that no appreciable softening will take place during the early months of pregnancy. In the supravaginal portion of the cervix, however, we have a tissue on which more reliance may be placed, and one in which changes in the consistence, some authorities hold, denote but one condition, namely pregnancy. As I have had no experience in obstetrics, my remarks on this part of the subject are gathered entirely from books. Hegar's sign depends upon a marked softening and compressibility of the isthmus, that portion of the uterus which is in part the lower extremity of the corpus and in part the upper of the cervix. This segment of the uterus becomes soft, thin, yielding, and elastic, while the fundus above and the cervix below remain comparatively firm. When well developed it seems almost as if the body of the uterus and the cervix were two separate organs. This compressibility may be elicited by a bimanual examination in one of three ways: If the fundus is anterior, the finger tips on the abdomen are made to sink in deeply behind the uterus, while the finger in the vagina is pressed far back on the upper surface of the cervix. When the fundus is posterior, the hand on the abdomen is pressed deeply in above the pubis, while the finger in the vagina is pushed backward and upward on the lower surface of the cervix; or, with the forefinger in the rectum and the thumb in the vagina, the hand on the abdomen presses the uterus down between the thumb and index finger. But the presence of Hegar's sign cannot always be proved or disproved, owing to large deposits of fat or rigid abdominal walls. If it is present, is it a positive sign of pregnancy? C. Reinl,[1] one

[1] Präger med. Woch., June 25, 1884, No. 26, p. 253.

of Hegar's assistants, considers it as such, and states that it does not occur in the presence of tumors. P. Compes,[1] another assistant, says the sign is positive, but a little later in the same article he says, "When present, pregnancy is likely in the highest degree," and that he has never observed it in any pathological condition of the uterus. He explains this compressibility by saying that the lower uterine segment is the thinnest portion of the uterus, and that when the womb is gravid this portion becomes soft, swollen, and edematous—inferring that the changes in the blood supply and pressure are the causes. If this is so, the sign is of no more value than a soft vaginal cervix, as it depends upon the same conditions for its existence. Hirst states that the sign is not always appreciable in pregnancy, and that it may also be elicited in a uterus softened by congestion, inflammation, or the presence of fluid (hydro- and hematometra). Lusk thought that it was not conclusive, as its absence has been observed in early pregnancy, and a condition closely simulating it has been noticed in certain morbid states of the non-pregnant uterus. He then gives a reference where presumably these cases are noted, but I am unable to find a single case in the article referred to.

On the other hand, A. L. Galabin says that the compressibility is due to the walls of the fundus becoming expanded and softened while the ovum does not yet fully fill its cavity, and R. L. Dickinson[2] accounts for it by the enormously thickened mucosa containing many dilated and irregular blood sinuses which reach their maximum development at the end of the second month, and the softness and pulpiness of the decidua. If these latter theories be true, the sign can only occur in the presence of the products of conception, and when it is demonstrable it should be a pathognomonic symptom of pregnancy.

We have, then, eminent authorities differing on the cause of this sign and on its value as a diagnostic symptom. Which is the correct view my experience in no way permits me to judge. However, I am unable to find reported a case of myoma of the uterus in which this sign was noted as present, nor has such a case occurred in my own practice. I have on three occasions operated for myoma of the uterus where, after the abdomen was opened, the womb resembled pregnancy in appearance, size, and consistence, except that the compressibility of the

[1] Berliner klin. Woch., Sepember 21, 1885, No. 38, p. 608.

[2] Practice of Obstetrics by American Authors, 1899, p. 143.

lower uterine segment was absent, and the absence of this sign permitted me to proceed with the operation with the utmost confidence, and I may add that that confidence has so far not been misplaced.

If Hegar's sign has value, it is of the highest importance in differentiating these two conditions; if it has not, my good fortune has been far superior to my knowledge.

DR. CHARLES P. NOBLE.—So far as my experience goes, I have never seen Hegar's sign present when pregnancy was not present. There is no doubt of the great value of Hegar's sign in diagnosis of pregnancy, and in assisting the surgeon not only to escape from the particular error referred to by Dr. Le Conte, but from other errors. A good many times the abdomen has been opened with the impression that a tumor was present in the pelvis associated with the normal uterus, when, as a matter of fact, the supposed tumor was the pregnant corpus. Often an enlarged cervix has been mistaken for the normal uterus, and the pregnant fundus for a tumor supposed to have no connection with the uterus. The knowledge of this will protect the surgeon against this error more frequently than from error in case of myoma. As regards the particular use of Hegar's sign, to which Dr. Le Conte called attention, I have never met a case in which I personally felt much question as to whether the condition was that of pregnancy or the presence of a myoma. Usually when the tumor reaches the size of four months' pregnancy (and Hegar's sign is not of much value before the fourth month) there are other evidences of pregnancy.

In the months earlier than the fourth month there is another sign of pregnancy of the greatest value, one upon which I have written two or three papers—the characteristic shape and feel of the uterus. The non-pregnant uterus is flattened from before backward, and it has a pretty solid "feel" to the fingers. As the ovum grows, very soon the pregnant uterus has a semi-cystic feel, made out as early as the sixth week. Another part of the sign is that as the ovum grows the cavity of the uterus must necessarily enlarge antero-posteriorly as well as laterally, and as a result the uterus juts out over the cervix in front and behind in a characteristic way. Some one has likened that condition to the relation of the neck of the jug to the belly of the jug, and called it "the fat-belly-jug sign." That particular fact, together with the semi-cystic feel of the uterus, is a most valuable sign of early pregnancy. With smaller myomata it would be of much more value in differentiation than Hegar's sign, which is only characteristic after the fourth month.

DR. E. P. DAVIS.—In order to understand the question perfectly, we may revert to the recognized changes in the uterus in pregnancy. and the valid sign of pregnancy.

The cervix is held by the majority of observers not to be altered in pregnancy, not shortened, not lengthened Hence the condition of the cervix remains the same throughout. Any sign, therefore, of anatomical character must be independent of the cervix.

The development of the lower uterine segment depends upon the development of the fetus. The function of the lower uterine segment is to determine the presentation of the child.

Again, we have the sign to which the younger Browne has called attention—unilateral development of the body of the uterus. This applies to early pregnancy, when, as the ovum lodges in one or other side, we have up to the third month the uterus larger on one side.

We have the intermittent contractions of the uterus, which is a sign of considerable value. In the normal uterus there can be no question of the development of the lower uterine segment. Hegar's sign must be held to be present in all uteri developed under normal conditions. If this can be obtained it must be held of decided value in the diagnosis of early pregnancy.

There are some conditions in which pregnancy will simulate fibroid tumor. One of them is pregnancy with more than one fetus. The abdomen has been opened by skilled observers for multiple pregnancy, supposing that a fibroid was present. The operator has been misled by the different members of the fetus. There has been a thin-walled uterus, and the parts of the fetus have been mistaken for fibroid nodules. Also, in those imperfectly developed uteri in which interstitial pregnancy occurs or pregnancy in one cornu of the uterus, fibroids are simulated.

Taking all these conditions into consideration, I believe that we can, from the standpoint of obstetric observation, conclude that in women who have been in good health before the pregnancy has proceeded without any evidence of malnutrition or more development of previously existing pelvic disease, softening of the lower uterine segment is bound to be present, and is the most positive anatomical sign of the alterations of the pregnant uterus which we find. It does not, however, prove the existence of a living fetus. One of the most perplexing conditions is that in which the pregnancy proceeds to the fourth or fifth month, when the fetus dies; you have the anatomical signs of pregnancy, and the failure of the uterus to increase in size, and the gradual absorption of amniotic fluid.

Another puzzling condition, and which may be mistaken for pregnancy, is that in which the fetus is the site of malignant growth of sarcomatous nature. Some of the physicians of this Section would recognize the case of a patient who went the rounds of the Eastern States about a year and a half ago with a tumor midway between the pubes and umbilicus. The case was diagnosticated pregnancy. It finally came to operation, and a metastasis was found in one of the ovaries. Again, a woman, pregnant illegitimately, secured a note to a prominent physician in which the statement was made that the woman

had a malignant growth and that the womb must be promptly removed. The patient was thought to have sarcoma, but upon further examination was found to be pregnant with a living child. By the use of a steel-boned corset the child had been forced into the pelvis. All the symptoms of pregnancy were obscured, and a diagnosis of possible malignant tumor of rapid growth had been reached.

From my own experience I would say that Hegar's sign in women having no lesions of the pelvis, and with a fair physical development, is a positive sign of pregnancy. The sign can be elicited by examination under ether, whether the abdomen be opened or not, in almost all cases. I would recommend the conclusions which Dr. Le Conte has reached in his paper.

DR. R. C. NORRIS.—The practical value of Hegar's sign is that it helps us to make an early diagnosis of pregnancy, *i.e.*, it differentiates a pregnant from a non-pregnant uterus. Its value to differentiate early pregnancy from other intrapelvic affections, such as a myoma, is not so great. Since my student days I have spent many hours working in various clinics, and I have always made a point of studying this sign as much as possible. It was a long time before I could feel any assurance in making a diagnosis of pregnancy by eliciting this sign. To the man who makes the casual vaginal examination it will be of no real value, for it depends upon a trained touch in examination. It is difficult to elicit in a woman who is stout and has thick abdominal walls; in such a patient bimanual examination will not suffice. In a woman who is relaxed this is the best method of examination. In women in whom the abdominal walls are thick, introduction of the index finger into the rectum and the thumb into the vagina will elicit it. It is sometimes necessary to administer an anesthetic to accomplish the diagnosis of pregnancy by Hegar's sign. Its real value, to my mind, depends upon its association with other signs—namely, the changes in the shape of the fundus and body of the womb, the unilateral enlargement of the womb, and particularly with the intermittent uterine contractions. My experience has been that the value of the sign is increased when found associated with those changes, and lessened if one or more are absent.

The absence of changes in the cervix during pregnancy, referred to by Dr. Davis, is, no doubt, theoretically correct. There is no elongation of the cervix, but there is a softening and infiltration, which can be elicited by the sense of touch, which has an unquestionable diagnostic value.

Regarding the differential diagnosis between a small and soft myoma and an early pregnancy, I have never been able to find the same soft, yielding lower uterine segment in the former as we find in early pregnancy, associated with the uterine contractions and unilateral enlargement. To sum up, I would say that I have found Hegar's sign of great value when associated with the enlargement of the body of the womb peculiar to pregnancy, and with the intermittent contractions so charac-

teristic of pregnancy. When these signs are elicited several times, while the patient is under ether, the diagnosisis relatively certain.

DR. LE CONTE (in closing).—I desire to know whether the sign was or was not a positive one of pregnancy, and whether it could occur in the presence of tumors. The discussion this evening leaves me still in doubt.

DR. A. ERNEST GALLANT, of New York, read a paper on

THE CORSET FOR MOVABLE KIDNEY.

In presenting this subject for your consideration, it will be from the anomalous position of one who, while believing that women would be far stronger, healthier, and better fitted to perform the duties incumbent on the sex if they never wore corsets, yet advocates the wearing of a corset; and, secondly, while practising surgery, is so thoroughly convinced of the efficacy of the plan herewith laid down that he feels constrained to preach orthopedic in preference to more sanguinary measures. Let us look at this matter from the standpoint that operations on movable kidneys are but rarely necessary; that from 90 to 95 per cent of symptomatic movable kidneys can be relieved, symptomatically, by wearing a properly fitting corset; and how to select and adjust such a corset.

A woman suffering from an unrecognized movable kidney is truly an object for commiseration, who migrates from physician to physician, from one place to another, perhaps having had perineal and cervical lacerations repaired, ovaries, tubes, uterus, and appendix removed, drugs *ad nauseam*—a veritable "Wandering Jew" seeking relief and finding none. If by chance she runs across one who recognizes the source of her troubles, replaces and supports the movable kidney, she experiences such a sense of relief as to "make of her a new woman."

Here let me urge upon every family practitioner the necessity of constant practice in abdominal palpation and percussion, as equally essential to his patients' welfare as skilful recognition of lesions of the heart and lungs.

DEFINITION.—When palpating for movable kidney through the abdominal wall, we must bear in mind that, with a woman in the dorsal position during quiet respiration, the lower pole of the organ lies above the chondral border of the eighth rib; that the kidneys are not fixed organs—"they are movable, and during life, with all their anatomical relations undisturbed, they possess a range of up-and-down movement which has

been estimated by Albarran at from three to five centimetres" (Moullin).

MOULLIN'S TEST FOR PATHOLOGIC MOVABLE KIDNEY.—"The failure of the kidney to reascend on tranquil expiration—coughing or straining is not fair—when the patient is standing upright and has forced the kidney down as low as she can by deep inspiration. I look upon this as sufficient, even if the kidney comes down only low enough to enable its inferior extremity to be felt. If, on the other hand, when the patient is standing upright the kidney descends on inspiration, so as to bring even half of it within reach, I should not on that account regard it as pathological, *provided it recedes as soon as the tension of the diaphragm is relaxed.* The kidney still retains its normal relation to the diaphragm, the movement of the one follows that of the other, and this I regard as the real test whether the mobility is normal or abnormal. It will not answer if she is lying down, for in this position even a greatly displaced kidney may slip back again into its bed of its own weight."

While keeping the results of Moullin's test in mind, we must not lose sight of the fact that the amount of suffering does not depend upon the extent of kidney excursion. Frequently minor degrees of mobility produce major suffering, and *vice versa;* also the inconstancy of kidney displacement—present to-day, absent to-morrow; freedom from pain in the morning, intense suffering during the afternoon and evening, or until rest can be obtained.

FREQUENCY.—At the present time sufficient systematic uniform work has been done in examining women for mobile kidneys to assure us that it is a very common condition, and those who have paid most attention to this anomaly agree upon the presence of *symptom-producing* nephroptosis in at least 4 to 5 per cent of all women, or, approximately, 1,000,000 in the United States.

For the purposes of this communication a review has been made of the histories of 1,900 gynecologic patients who have come under my care, viz.: 1,000 consecutive females at the Roosevelt Hospital O. P. D., 800 consecutive females at the Northern Dispensary, and, for comparison, 100 consecutive females in private practice.

In dispensary practice, only such were noted as gave symptoms referable to the kidney, with the following results: Of the 1,000 at Roosevelt, there were 21 with movable kidney or

kidneys; of the 800 Northern Dispensary patients, 7; while of the 100 examined at my office, 13 had one or both organs dislodged, with characteristic symptoms. This excess in private practice can be accounted for on the ground that the examination always included all the abdominal viscera, and that over one-half were seen in consultation.

AGE.—Of these 41 cases, the ages ranged from 20 to 60 years: 20 to 25 years, 13 cases; 26 to 30 years, 10 cases; 31 to 35 years, 9 cases; 36 to 40 years, 5 cases; 41 to 45 years, 2 cases; 47 years, 1 case; 60 years, 1 case—corresponding to the ages during which this condition is most frequently recognized.

Comby reports 18 cases personally met with in children; 2 were aged respectively 1 month and 3 months, 6 were between 1 and 10 years, and 10 were above 10 years of age. The mobility doubtless dated further back than this. Of these cases 16 were girls and 2 were boys, the same proportion of the condition as has been observed in adult life. In 14 of the cases the mobility was associated with dyspepsia and dilatation of the stomach; hereditary syphilis was obvious in 2 cases, chlorosis in 2, luetic diarrhea in 1, migraine in 1, and psoriasis in 1. In nearly every case the affection was latent; in 2 it had been mistaken for chronic appendicitis; twice it had been recognized and treated.

Suckling found movable kidney quite common among girls who serve beer, probably from being obliged to constantly stoop and again stand upright almost immediately in drawing beer.

PREGNANCY.—Thirty-eight of these women were married, 3 unmarried, 1 of the latter having borne one child; 17 had never been pregnant; 3 had miscarried once; 1 had miscarried once and borne 3 children; another miscarried 3 times and delivered 3 children; 9 had given birth to 1 child, 8 to 3 children, 2 to 4 children, and 1 each to 5, 6, and 7 children respectively. One woman was three months pregnant at the time of examination. In one case the nephroptosis was noticed shortly after the puerperium; another followed immediately after a severe blow over the right kidney.

ABDOMINAL TUMORS.—The absence of a single case of abdominal tumor, present or having been removed, was quite notable. Three cases of lacerated perineum, second degree; in one instance a small cervical polypus; the fundus uteri lay in the hollow of the sacrum in 15; anteflexion of the cervix present 3 times, bilateral pyosalpinx once, unilateral twice.

SYMPTOMATOLOGY.—The cases now under consideration

were examined for movable kidney, our attention having been directed thereto by a history embodying two or more of the following quite definite symptoms:

1. The majority of these patients were thin, nervous individuals, who had wandered from one physician to another, habitual tea or coffee drinkers, always constipated, restless, sleepless, victims of the so-called sedatives, whose lives were a

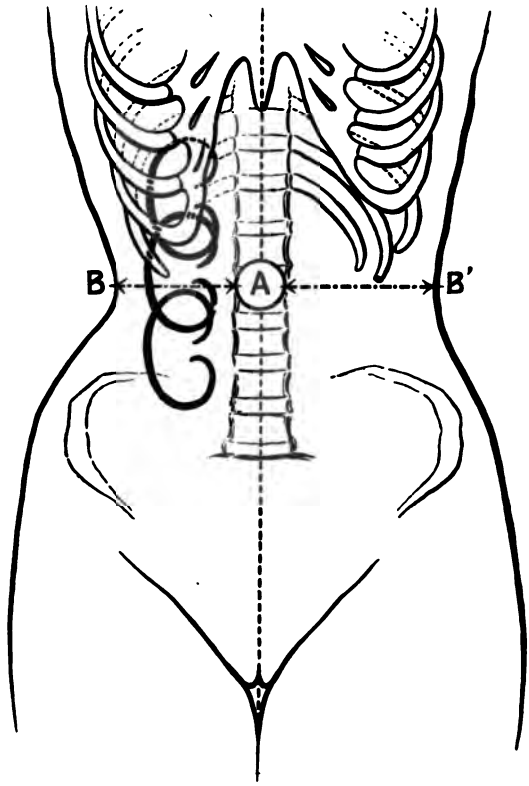


FIG. 1.—Left half of figure, without corset—absence of shelf, A-B'; right half, upper kidney supported by corset, shelf at A-B; middle kidney compressed by corset; lower kidney below waist line, inducing hydronephrosis.

burden to themselves and a trial to their friends and medical adviser.

2. *Pains.* (*a*) Pain in the back, about the ninth dorsal vertebræ, near the tip of the scapula, or a feeling of fulness, swelling, soreness, or bloating along the flank, of a remittent type, very distressing, was given as the chief trouble in 15 instances. Such a patient complains that she *cannot wear a*

tight corset, or wear no corset at all; she feels all right in the morning, dresses, shops, comes home fagged out, the distress in her side drives her almost frantic. Hastily removing her clothing and corset, with a sigh of intense relief she sinks upon the bed, draws up her knees, and, after a short nap, is able to resume her clothing. This programme may be repeated two or three times a week, or at shorter or longer intervals. Examination at this time reveals a distinct fulness along the loin, the kidney a hand's breadth below the chondral border, very sensitive to touch, not always replaceable until the patient has rested for some time on her back; after the tension has diminished, by gentle massage the organ can be replaced. On again rising the inclination to pass water is often quite imperative, and sometimes "it seems as if she would never get through." Such a condition can only be caused by compression of the displaced kidney at the waist line (Fig. 1) when the corset is put on, or by the kidney dragging upon and kinking the ureter, or both together, inducing temporary *hydronephrosis*.

(*b*) Epigastric pain, bloating, belching, inconstant appetite, and dyspepsia which had responded to no treatment, chemical or dietetic, caused 8 women to seek relief, and was relieved to a greater or less degree after the kidney had been put at rest by a corset.

(*c*) Lumbar pain and sacral pain (of each 4 cases) were attributed to inflammation of the utero-sacral ligaments with uterine displacement or descent, and responded to appropriate treatment. Pelvic pain (6 cases) and pain in the thighs (2 cases) were accounted for by pelvic or vaginal disease.

(*d*) Four patients suffered from pain in the gall bladder, another presented moderately well-marked *jaundice*. No enlargement of the gall bladder could be made out, nor was the nature of the paroxysms of the colicky kind.

(*e*) Painful or frequent micturition, with a burning sensation during the act, sometimes with excessive, in others diminished urine, occurred in 8, and a well-marked purulent urethritis in one patient. Appropriate local applications and internal medication were combined with support of the kidney.

(*f*) Appendicular pain was present in but 7 cases, and examination proved the presence of tender, thickened appendix, with or without adhesions, in all these patients. Case 124 had had a large abscess of the appendix drained March, 1895; operation for ventral hernia November, 1895; both kid-

neys were found movable, near the pelvic brim, not wholly replaceable, January, 1896. Owing to my inability to replace the kidneys, she was advised to wear a stout abdominal binder, and when seen, January, 1901, was very comfortable.

(*g*) Colitis of a catarrhal type, and to be explained as a symptom of movable kidney, caused by reflex disturbance of Meissner's plexus, 1 case having lasted two years and resisted all medication, was controlled by castor oil, thirty minims thrice daily, and support of the mobile organ.

(*h*) Three patients called my attention to a "lump," one on the left and in two on the right side; all proved to be displaced kidneys.

(*i*) The presence of a moderate enlargement of the *thyroid gland,* unilateral or bilateral, has been noted as of so common an occurrence among women, young and middle-aged, as to necessitate its recognition in every neurasthenic woman, though I find but one mentioned among the cases we are now studying. Exophthalmia is comparatively rare, but slight hypertrophy of this gland, with its deleterious effect on the heart's action, is common.

(*j*) *Hematuria.* Watson Cheyne has recently reported a case of hematuria caused by movable kidney, which he cured by nephrorrhaphy.

(*k*) *Menstrual exacerbation.* Cordier "has noticed in a number of instances that during the menstrual period the kidney enlarges slightly and becomes more painful, and the attacks of nausea and general nervousness are more pronounced. The pain is increased by exercise, and is felt in the side affected, often shooting down the inner side of the thigh. A loaded colon, or even gaseous distension of this bowel, increases the pain. The pain is often referred to the bladder, urethra, labia majora, thighs, and to the inner side of the knee."

(*l*) *Foot-cramp.*—In two of Cordier's cases "a cramping in the muscles on the plantar surface of the foot was a marked symptom, and cannot be explained on the theory that systemic uremic poisoning produced the spasms, as in both cases the kidney function was not perceptibly impeded in the least. The spinal and sympathetic anastomosis is the most acceptable. In both these cases the symptoms disappeared after nephorrhaphy."

EXAMINATION FOR MOVABLE KIDNEY. *The Dorsal Position* —For routine work in connection with gynecological

examinations, while the patient is on the table with the knees drawn up, before making the vaginal examination it is my rule to palpate the abdomen. Standing between the patient's knees, gentle but firm pressure is made upon the suprapubic region, testing for pain, tenderness, and any enlargement of the uterus or bladder or broad ligaments; next pressure over McBurney's point to elicit appendical tenderness; up along the colon, noting the presence of fecal or other nodular masses. On reaching the right hypochondrium the examining hand is placed with the finger tips of the middle, ring, and little fingers in contact with the free chondral border, and notes the presence of gall bladder or liver enlargement. Next, while the hand is lightly held with the finger tips in contact with the ribs, the patient is instructed to take a deep, full breath, deep enough to distend the *abdomen* rather than the thorax, to shorten the diaphragm and push the liver and kidney downward toward the examining hand. If but the lightest pressure is made as the patient distends the abdomen, the kidney, especially if freely movable, will often be felt passing downward under the examining hand. Just as the patient is about to expire, the tips of the examining fingers are flexed inward and backward to prevent the displaced kidney from reascending, and is held in this position for diagnostic palpation. In a large majority of cases this simple maneuvre, practised, of course, on both sides, will positively determine the presence of a movable kidney. For examination after this plan, loosening or removal of clothing, corsets, etc.. can be avoided.

The most common source of failure is due to the fact that, when examining for the first time, pressure is made over the hypochondrium *before* the kidney has been forced down below the border of the ribs, and this pressure forces the kidney upward into its nest, holds it there, prevents its downward displacement, and defeats the object of the search.

Bimanual Examination.—If the kidney fails to exhibit downward tendencies or present itself to the examining hand in the manner above described, if the bowels are thoroughly emptied and the head and shoulders elevated, sometimes it is of advantage to palpate bimanually. For this purpose the corset must be removed, the waistbands loosened, patient in the gynecologic dorsal position. The examiner faces the corresponding side, seated or standing; if on the right, places his left hand under the loin, and his right hand lightly over the gall-bladder region. Instruct the patient to

take a long, full inspiration, to force the kidney downward; then, as expiration begins, approximate the two hands, catch and palpate that organ. In a number of instances the kidney will already lie below the free chondral border, and necessitate careful palpation of the whole area from that point down to the false pelvis.

Vertical Position.—To ascertain the maximum degree of displacement of which a kidney is capable, and, in some, to make a positive diagnosis, it is necessary to seat the woman on a chair, with her hands and head inclined forward, resting upon the back of another chair, while palpating bimanually.

Not infrequently, when examining in the vertical position, the mobile kidney can more readily be made out by grasping the loin between the thumb and fingers—the thumb behind, fingers in front—compression being made after full inspiration. As the woman expires, the kidney will be felt to slip upward from between the fingers with a slight jerk, noticeable to the examiner and painful to the patient.

If the woman is not below the average height, she can stand behind a chair, place the flexed elbows upon its back, and in this way relax the abdominal wall to its greatest extent. This and the former position afford the best opportunity for applying Moullin's test.

Left Lateral Position.—Sims' position, as suggested by Israel, for the discovery of a movable kidney, seems to the writer somewhat fallacious, as, owing to the breadth of the hips in women, the tendency would be to dislodge the kidney and viscera upward and obscure the true relations.

Palpating the Kidney.—Our examinations have shown a greater frequency of displaced left to right (6 in 25) and of both kidneys (10 in 41) than illustrated by the following table:

Author.	Cases	Left.	Right.	Both	Where Recorded.
Einhorn...	26	1	25	0	Amer. Year Book Med., 1900, 248.
Gallant....	41	6	25	10	
Keen.....	87	7	76	4	Trans. Amer. Surg Soc., 1890.
Landau....	178	13	151	14	Arch. für klin. Chir., 1879.
Godart-Danhieux	212	1	183	29	Gaz. hebdom. de med. et chir., 1900.

Mobility.—Keeping in mind the fact that all of the cases now under consideration were productive of well-marked

symptoms, the following table well shows how very slight a displacement can at times induce agonizing suffering:

DOWNWARD DISPLACEMENT (viz., that portion of the kidney palpable below free chondral border of the eighth and ninth ribs).

1	2	3	4	5	6	7	8	9	10	12	13	15 cm.	Pelvic brim.	? ?
3	2	3	1	2	3	1	4	1	5	8	1	4	3	10 cases.

The *size* of the kidney may be misleading; in one case that organ was very small, fortunately the whole organ was palpable; another (570R) double the normal size, without any manifestation of actual pathologic lesion in the organ itself.

Right Lumbar Flattening.—Mansell Moullin insists that "in a very large number of cases of movable right kidney there is a definite flattening of the right lumbar region, which is not due to the malposition or even to absence of the right kidney. . . . The flattening is a sign that the vertebræ have undergone a certain degree of rotation, and it is an indication of the cause of displacement, not a consequence of it. . . . From a position of greatest safety (in quadrupedal mammalia), with the assumption of the erect attitude the kidneys are placed in a position from which almost all security has gone, and it is not to be wondered at that comparatively trivial causes, such as increase in weight of the organ without corresponding increase in bulk, a sudden violent jerk, or a great lowering of the intra-abdominal pressure, can increase their normal range of mobility and force them downward. The wonder is, not that movable kidney occurs, but that it does not occur more often."

While the kidney is held in the grasp of the examiner's hands its characteristic shape can be mapped out, the hilus defined, and the pulsations of the renal vessels recognized. Cordier mentions that "on pressure a sickening pain is (sometimes) produced, very similar to that made by firm pressure on the ovary or testicle. . . . A sensation similar to that produced by shooting a plum seed between the fingers may be elicited by the examiner by grasping the organ between the two hands and pressing them firmly together" as the organ retreats upward into its bed.

Occasionally, in women with thick, tense, distended abdominal walls, the administration of an anesthetic for the purpose of determining more definitely the actual condition will be a wise precaution.

Undue prominence of the *pulsating abdominal aorta*, very sensitive to pressure and a source of discomfort to the patient, has been so frequently noticed when palpating the abdomen that it is believed to have some connection with this malposition of the kidney.

Cordier was struck by the frequency of this throbbing in the region of the abdominal aorta, and this vessel's impulse was so plainly felt that an *aneurism* was suspected and added to the throbbing a distinct *bruit*. On pressing the kidney into its natural position he noticed that the pulsation diminished very much and the decrease in the pulsation enlargement was very perceptible. In explanation of these phenomena he suggests "that the aorta with the vena cava was pulled out of its 'bed,' or that a slight kinking produced a partial constriction of the aorta and a dilatation above or below the point obstructed." It was in 1884 that Landau called attention to the advantages of *auscultation* in eliciting a whistling murmur when a twisting or narrowing of the renal vessels occurred.

Palpation of the appendix vermiformis, by deep pressure over the right iliac fossa, owing to the frequent association of appendicitis with dislocated kidney, makes a recognition of the true condition of the appendix imperative, and with Edebohls[b] we believe that even though the kidney has been anchored to the lumbar region, the patient will not be cured until the diseased appendix has been removed. But, better still, if the kidney is held in place by a corset, in nearly all cases we can, with advantage to the patient, determine, without operation on the kidney, exactly what symptoms are due to the appendicitis and if its removal is unavoidable.

Enteroptosis associated with movable kidney has received careful study by Godart-Danhieux, who made a series of 871 observations on patients, most of whom showed disturbance of nutrition. In 268 males he found the kidney movable six times; once it was bilateral, and in the other instances on the right. In 603 women he found 212 cases of nephroptosis; in 183 cases this was of the right kidney, in 29 bilateral, and only once was the left kidney alone affected. The general percentage of nephroptosis in men was 2.33 per cent, in women 35.1 per cent. In the 603 women he found enteroptosis 178 times —that is, in 29.5 per cent. He also found ptosis of the liver in 3.8 per cent of the women. He believes that the most common cause of enteroptosis is a series of pregnancies, these acting through the diminution of abdominal tension. Age ac-

centuates the tendency to enteroptosis, even in nulliparæ; on the contrary, neither repeated pregnancy, advanced age, nor similar conditions have any influence upon the production of movable kidney. He considers enteroptosis to be always produced by a diminution of abdominal tension. It is not always accompanied by nephroptosis. There is no parallelism between the two conditions at different ages and under the influence of different factors. He thinks, therefore, that they are due to different causes.

DIAGNOSIS.—The recognition of a movable kidney in thin or moderately nourished women, if the bowels are empty, when a part or the whole of the organ can be palpated. and it suddenly slips back into its bed, especially if the appendix is the seat of a chronic inflammation, the diagnosis is a matter which every practitioner ought to be prepared to determine.

On the other hand, when the abdominal wall is thick or rigid; when the symptoms point to gallstones impacted in the cystic or common duct, with or without jaundice, to cysticercus cyst, to a false or dislocated lobe of the liver; if associated with enteroptosis, gastroptosis, uterine displacements, and other pelvic disorders; if it resembles malignant disease of the stomach, pylorus, duodenum, liver, or colon; if the spleen or pancreas has become loosened; if the kidney is but slightly movable or has been congenitally displaced; if a third kidney, whether freely movable or attached in the false or true pelvis, be present—the diagnosis presents a much more complicated problem, as illustrated by the following cases:

Gallstones versus Movable Kidney.—Mrs. X., 47 years, multipara, of full habit, well nourished, flabby abdominal wall, has for fifteen years suffered with infrequent attacks of gastralgia, necessitating the use of morphine as the only drug which would allay the pain.

In July, 1900, she was prostrated by an attack, with pain in the epigastrium and right hypochondrium, extending through to the back, and of such severity that she was kept under the influence of opium for eleven days and in bed for five weeks.

When seen by the writer, September 6, 1900, she was deeply jaundiced, really a chocolate color, with severe gastritis, manifested by inability to retain food, liquid or solid, stools clay color, and insomnia of a very pronounced type. The region of the gall bladder was very tender; the gall bladder could not be made out, but gave a sense of resistance and fulness on pressure. The bowels were freely moved by salines, patient

kept in bed most of the time, and on September 28, when she started for her country home, the skin was nearly of a normal hue. While on the train she experienced a comparatively slight return of the pain in the gall-bladder region, with reappearance of the jaundice lasting a few days.

November 10, 1900, the paroxysmal pain returned, especially severe in the back, and associated with a band-like sensation; severe nausea and vomiting, inability to retain even water, severe headache and insomnia; vomits clear mucus or whatever had been ingested; pain relieved by morphine, less and easier when lying on her back or right side; cannot lie on left side; gall bladder palpable, distended, with a mass behind it, the nature of which I was unable to determine.

November 14, 1900, in consultation with Drs. Delafield and Bull, both agreed as to the diagnosis of gallstones passing through the common duct, and advised operation after the jaundice had subsided, unless a severe attack came on which could not be controlled by opiates, then operate at once.

Not being satisfied as to the exact nature of the mass behind the gall bladder, further careful palpation convinced me that the greater portion was the lower pole of the considerably enlarged kidney, which could not be replaced. By carefully applied massage and manipulation the kidney was in three days elevated to a level with the chondral border, the condition explained to the patient, who was willing to accept any plan of treatment to avoid operation. While in bed she wore a very snug abdominal binder, and a tight corset, applied while on her back, before getting on her feet. She then recalled the fact that "she always felt better with her corset on." Up to January 6, 1901, she followed my instructions, but, "being Sunday and feeling so good," she sat up reading nearly all day *without* her corset, and at midnight the old pain returned with such severity that she begged for morphine, and half an hour later was peacefully sleeping. Even this transient attack increased the marked discoloration of the whole body. At this time she called my attention to the fact that she realizes several hours beforehand when the attack is coming, "because there is always an intense desire to empty the bowels, which is not relieved when the bowels do move."

The most careful search failed to reveal any gallstones in the stools.

Up to the present writing there has been no recurrence of the attacks, and, as the patient expresses it, she "is doing finely."

MacLagan and Treves record three cases of jaundice believed to be due to gallstones, but on operation were found to arise from movable kidney, in two cases producing "pressure on the cystic duct," and in the third case from "pressure on the common duct." They noted that in the former the jaundice was less and the pain probably less severe than when the pressure was exerted on the common duct.

F. I. Pool reports a case of movable kidney with hydronephrosis and gallstone in the same patient. She was 45 years of age. Her trouble had existed for twenty years, and recurred at long intervals. It consisted of severe paroxysms of pain in the right lumbar region, which also extended through in the direction of the groin. The paroxysms were accompanied by vomiting, and there was jaundice. The urine was normal, and she stated that on several occasions she felt the bladder rapidly fill up with a sensation of relief. On examination the kidney was found to be enlarged and movable, and an operation for fixing and draining it was undertaken. The usual lumbar incision was made. At the back of the kidney was felt a large stone, which seemed to be in a dilated pelvis, but it remained behind on withdrawing the kidney, which was freely movable in the loose perinephritic fat. An exploratory incision was made through the anterior abdominal wall. The gall bladder was found to be thickened, and contained a large stone, which was removed, and the opening in the gall bladder was sutured to the edges of the abdominal wound. An incision was made into the pelvis of the kidney, which, with the ureter, was explored, but no cause for the hydronephrosis was found.

TREATMENT OF SYMPTOMATIC MOVABLE KIDNEY.—The relief from suffering induced by a movable kidney or kidneys involves (*a*) maintenance of the organ in its natural position by mechanical means or by operation, and (*b*) efforts toward improving the general condition of our patient.

Operation.—Before considering the corset as a mechanical means in the treatment of nephroptosis, let us inquire:

1. What does fixation of a kidney accomplish?
2. What are its sequelæ?
3. What does it fail to accomplish?

1. Fixation of the kidney, by whatever method, endeavors to anchor in an abnormal, stationary position an organ which naturally lies upon a soft, fatty cushion, in a strongly protected position, vacillating with every respiratory impulse. Does not this plan simply transfer the weight of the organ

from its vascular pedicle to the lumbar cicatrix? Have we not the same difficulties to contend with as in ventral fixation of the uterus or by Alexander's operation for uterine displacements?

Byron Robinson, in his incisive way, tells us that he "has watched the hanging of kidneys in Chicago for the past ten years, and has found that it is the amateurs and general surgeons who resort to nephrorrhaphy and nephropexy, not the gynecologists," and maintains that this condition must be treated by mechanical means.

2. That, so far, no plan of operation has achieved all that some authors would have us believe is quite evident when Senn condemns in the strongest manner the use of any suture in the kidney; while McArthur advises placing the kidney in a pocket from the anterior layer of the lumbar fascia and the transversalis aponeurosis; Ferguson passes a band of the lumbar fascia around the lower pole to support it; Morris strips off a portion of the capsule and sutures it to the fascia, etc., each endeavoring to devise a plan which will assure success, avoid sequelæ, and permanently retain the kidney in its abnormal position.

Whether due to buried sutures, fibrous tissue, or to "cutting the ilio-lumbar and ilio-gluteal nerves by careless operators," complaints from physicians and patients are becoming more numerous that post-operative pain and failures occur and that relief of symptoms is not always assured.

3. In many instances the symptoms from which the patient seeks relief, while simulating those of nephroptosis, even when the kidneys can be partially or wholly palpated, may be due to other lesions. Thus we find that fixation of the kidney does not benefit the relaxed abdominal wall with its accompanying enteroptosis, gastritis, constipation, etc., and the operation becomes in many instances "an expériment to determine what symptoms are due to the dislocation and what are due to other conditions."

Mistaken diagnoses, operations for gallstone (MacLagan and Treves), ovarian cysts (Miller), appendicitis, etc., should make one hesitate and apply any diagnostic means before subjecting a woman to the risks of an operation, however slight, with at least one death from tetanus reported by Henry Thompson.

Comparing the results of *nephrorrhaphy vs. support,* E. Henock concludes "that the radical operation for floating (movable) kidney undoubtedly gives brilliant results in some

cases. It is, however, not entirely harmless, and the mere fixation with suture is not always of permanent value. Again, the patients are very reluctant to undergo operative intervention, and submit only when the discomfort and pain are unbearable—a condition which, on the whole, is very rare. For the most part, then, we try to alleviate the condition with bandages and supports. These give the patient more confidence and support, as it were, and are therefore to be recommended."

Mechanical Means.—Every careful observer has met with patients who have derived benefit from the use of one or other of the numerous belts, pads, etc., but almost all come to realize that belts are difficult to retain in position, that pads slip and do not maintain the kidney, and all by their additional bulk are very objectionable to the wearer, and, by pressure localized at one portion of the abdomen, further increase rather than diminish the accompanying visceral ptosis. *Abdominal binders,* when properly made, do tend to elevate and support the redundant abdominal wall, but do not bring direct support to the dislocated kidney.

The writer was first led to study the use of the corset by Edebohls' statement "that a well-fitting, rather tight corset answers still better in males, and in women in whom no contraindication to the wearing of a corset exists. Other than the foregoing, no reference as to style of corset and method of application could be found in literature.

The Corset.—Do women wear corsets because they enjoy thus being harnessed up? I trow not.

About seven hundred years ago a *demimondaine,* with a view of intensifying her charms, encased her body in a corsage of steel; and as centuries rolled on, this monstrosity—modified, it is true—has come to be considered an essential part of every woman's outfit from the time she reaches puberty. Thus has the so-called civilized woman's world been dominated by the courtesan, whose invention has become a custom inexorable as the laws of the Medes and Persians, which but few women have the moral courage to defy. Nor is this the only reason. The present style of feminine architecture, with all the clothing dependent from and overlying at the waist, necessitates the wearing of some material around the waist which will support the great weight and prevent actual injury to the tissues at that point.

Can we of the sterner sex, while submitting to the present

styles in collars, hats, shoes, etc., take issue with them on this score? Can we consistently cry out against our fair sisters, the doctor's best friends? And what avail our cries against the dictum of *La Mode*, to whose behests we ourselves dare not turn a deaf ear? Personally, I am willing to fall in line with Prof. Virchow when he says: "In days gone by I have battled against the diabolical invention called the corset, but the crusade has been given up by me as absolutely futile" (Gal-

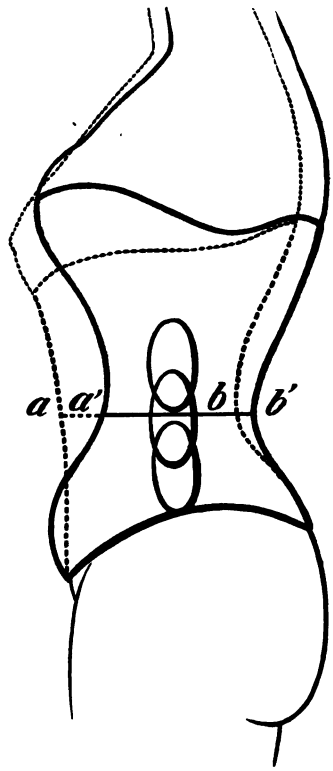


FIG. 2 —Heavy outline showing excessive constriction at waist line, *a'-b'*, productive of suprapubic protuberance. Dotted outline showing corset adjusted to support the lower abdominal wall, and greater circumference at the waist line *a-b*.

braith). I feel that it were better for us as a profession to seek rather to teach women how the corset can be rendered *least harmful*, and to take advantage of this (doubly) inflexible custom in relieving women who suffer from movable kidneys.

The Corset for Symptomatic Movable Kidneys—Style. In the majority of instances a woman, when selecting a corset, aims to secure such a one as will most nearly compress her

body into a size and shape corresponding to her own preconceived notions of the prevailing mode, regardless of personal discomfort, pain, or injury.

Among those who can afford to have corsets made "to order"—and this is without doubt the best plan—there are some who, in spite of the solicitations of corset-maker, dressmaker, and friends, persist in deforming themselves to such a degree as to wring from us that agonizing prayer of the famous Scotch connoisseur:

> "Wad some power the giftie gie us
> To see oursel's as ithers see us!"

When considering the style of corset for movable kidney, we endeavor to select one as *long in front as can be worn*, to prevent or overcome suprapubic protuberance with its accompanying visceral ptoses (Fig. 2). Fortunately for our purpose Dame Mode has decreed that the so-called "straight-front" corset is the "proper thing." These corsets are made with long, straight fronts, designed to erase the suprapubic projection and give especial prominence and an overhanging effect to the bust from the waist line upward. This is usually accomplished by drawing the abdominal wall upward within the corset as it is fastened from below upward, and really gives considerable support to the abdominal wall, at the same time it prevents excessive lacing at the waist line and lessens respiratory effort.

Size. The corset should be at least two inches smaller than has been habitually worn. You may well ask, how can a woman who has been unable to wear a tight corset, or no corset at all, be expected to put on one so much smaller?

Lacing the corset. When the kidney drops down to or below the waist line and the patient attempts to fasten her corset in the usual way, the kidney is included in the grasp of the corset and causes excruciating pain (Fig. 1). When the kidney is supported above the waist line this pain is not met with.

The corset should be laced with two wide, flat silk strings, beginning with one at the top, the other at the bottom, tying the two together in the middle. The lacing should be so adjusted as to give a V-shaped opening at the back, fitting very snugly over the hips and up to the waist line, less so from the waist upward. When adjusting the corset for the first time it must, of course, be fitted with the woman in the upright position, and readjusted after the corset has been put on, al-

ways with the idea of securing the greatest pressure and support for the lower abdomen.

First-class corsets have lacing over each hip, thereby adding to their flexibility and facilitating proper adaptation to the figure.

Putting on the corset. As ordinarily worn, corsets are shaped and put on in such a way as to compress the colon, small intestines, and pelvic viscera downward, crowding upward the liver, stomach, spleen, etc., and interfering seriously with their normal shape and functions. This result is chiefly due to the magnificent efforts, if applied in a proper direction, of the wearer to minimize the circumference of her waist. In order to prevent this in young women and overcome it in those of a more advanced age, we have sought such a style of corset, laced and put on in such a way, as will exert the greatest pressure over the suprapubic region and make extreme constriction of the waist an impossibility (Fig. 2).

Having approximately adjusted the corset to our patient's figure, she must place it around her waist and lie down upon the bed, with the knees drawn up, and fasten the hooks, beginning with the lowest, and secure the next in order from below upward.

As each succeeding hook is fastened the lax abdominal wall is drawn upward within the corset and held in that position by fastening the next hook. This maneuvre will seem at first somewhat difficult; but as it affords a fashionable outline to the figure and at once gives relief from symptoms, women are willing to persevere.

Before fastening the upper hooks of the corset the patient must push the kidney well up under the chondral border of the ribs. Patients readily learn to recognize the "movable lump" as the cause of their troubles, and how to press it upward beneath the ribs.

A victim of movable kidney must never be allowed to maintain the upright posture until the corset has been put on, and must wear it constantly when not reclining.

In advising women to wear a corset we restore a lifelong habit, suspended on account of the intolerable pain when wearing a corset; we suggest that it be of such a shape and style, laced in such a way, put on in such a position as will improve her figure (from a modish standpoint, at least), minimize the harmful effects of the corset, and prevent suffering from nephroptosis.

Too great stress cannot be placed upon the importance of the dorsal position when putting on the corset, as it relaxes the abdominal wall, permits the abdominal viscera to gravitate upward into their normal situation and be retained there, as the corset is fastened while they are *in situ* (Fig. 3).

A corset made and put on according to these directions should mould the figure into graceful outlines; should not constrict at any one point; nor should it be felt to exert more pressure over one portion of the trunk than another. Further, it should not interfere with the suppleness of the spine, a graceful walk, or lung expansion.

Precautions.—Whenever *pain or tenderness*, or both, are present along the loin or the hypochondrium, *before* attempt-

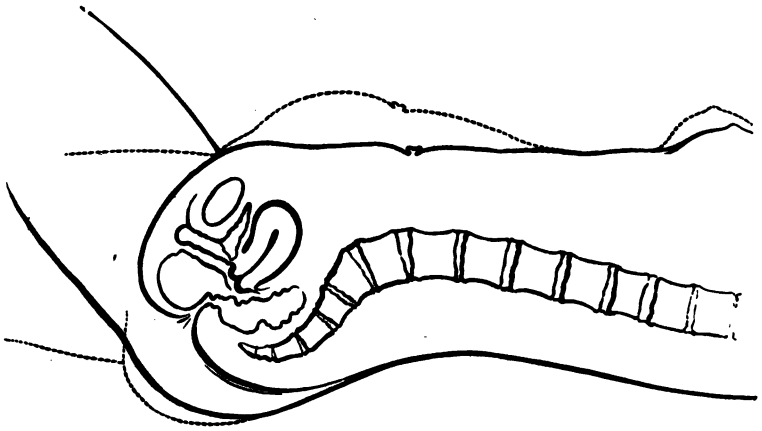


FIG 3.—Abdominal relaxation when in the dorsal position (heavy outline) compared with abdominal projection when erect (dotted outline).

ing to put on a corset the patient must be put in bed for a few days on a fluid or light diet, the bowels moved twice daily, and eight to ten hours' sleep assured, with daily massage of the trunk and extremities, giving especial attention to replacement of the dislodged kidney.

While a movable kidney can be held in position and the discomfort incident thereto abated, one must give the most careful attention to building up the patient's general health. Thin, neurasthenic women should be kept in bed; nourishment, including an unusual amount of fats, given every three hours; the bowels moved twice daily, with not less than from one to two quarts of an agreeable water daily for its effect in increasing weight and salutary flushing of the kid-

neys and intestines. In others it may be necessary to lavage the stomach, adjust glasses for defective vision, and in all to secure from eight to ten hours' sleep, with complete rest from care, noise, and excitement.

Thyroiditis. In many neurasthenics (so-called) a slight enlargement of the *thyroid gland*, with irregular cardiac action, a rapid, contracted, hard or soft pulse, has been noted. This hypertrophy can be readily recognized, on one or both sides, by placing the index or middle finger on either side of the thyroid cartilage, when, as the patient attempts to swallow, the slightest increase in size can be appreciated and appropriate treatment instituted.

It is hardly necessary to insist that careful attention be paid to the pelvic cavity and floor, that local treatment, removal of diseased organs, and repairs are essential for complete restoration to health.

RÉSUMÉ.—1. In view of the great frequency and intolerable suffering incident to *symptomatic movable kidney*, especially among women, every physician should be thoroughly familiar with the special group of symptoms manifested thereby and the simple methods for recognizing abnormal mobility of that organ.

2. For routine work the hand is placed just below the hypochondrium and the kidney displaced by deep inspiration, held and palpated, and allowed to escape during expiration. In some cases for the bimanual examination the dorsal or the upright inclined posture will prove more satisfactory.

3. While a certain number of these cases are subjects for operation, the other 90 to 95 per cent can be cured symptomatically by wearing a corset.

4. When advising the use of a corset, and directing how it shall be made, fitted, and put on, we appeal to our patient's vanity, aid her in conforming to the dictates of fashion in the least harmful way, and relieve her from the tyranny of suffering.

5. For this purpose we must secure a corset as long in front as can be worn, to elevate and support the redundant lower abdominal wall, and form at the waist line a shelf upon which the kidney may rest.

6. The best results, symptomatic and modish, are secured when the corset is "made to order," but the so-called "straight-front" corset, now on sale in every shop, has given very good results.

7. The corset must be not less than two inches smaller than formerly worn, laced at the back, from the top and bottom, with two flat laces, as an open V, to prevent chafing and cutting in thin women, and must be laced very snugly from the lowest point to the waist line, loosely from the waist upward, while the patient is standing.

8. Having thrown the corset around the waist, she lies down upon the bed, draws up the knees, places the head upon a pillow to relax the abdomen and permit the viscera to gravitate upward toward the diaphragm, and while in this position fastens the corset.

9. Before hooking the corset she must push the kidney into its nest under the edge of the ribs—a very simple matter when once learned.

10. The lowest hook of the corset must be fastened first, and so on from below upward. As each succeeding hook is secured the redundant abdominal wall must be drawn within the corset.

11. Any woman a victim of nephroptosis must never be permitted to maintain the upright position without having her corset on.

12. Such a corset, fitted and applied in this way, will (*a*) maintain a replaceable kidney in such a position, from which it cannot be dislodged downward, as to afford relief from all symptoms incident thereto; (*b*) by elevating and supporting the lower abdominal wall it will tend to prevent or overcome the effects of visceral ptoses, which nephrorrhaphy cannot do; (*c*) it will, with the kidney at rest, determine if the symptoms are due to mobility of that organ or disease in adjacent structures, and thus avoid mistaken diagnoses; (*d*) as the patient's general condition improves and she puts on flesh, the kidney will descend less and less, and, in some, entire freedom from symptoms has resulted; (*e*) the patient avoids the risks of operation, slight as these may be, the scars and after-pain and failures; and (*f*) if for any special reason the corset cannot be worn, we may at any time, *en dernier ressort*, suture the kidney to the lumbar region.

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DR. JOHN B. DEAVER.—I have listened with great interest and profit to Dr. Gallant's remarks. It is not necessary to deal with the subject extensively, but more particularly with regard to operation versus mechanical apparatus.

In palpation of movable kidney I have had occasion to adopt the method Dr. Gallant speaks of, and can indorse what he says. The position I adopt when there is difficulty in making a diagnosis is to have the patient lie on the opposite side. with the legs strongly flexed ; have her breathe down as deep as possible and hold the breath. I find that will displace a movable kidney which is otherwise difficult to diagnosticate. I seldom examine a patient in the sitting posture. The doctor is correct in speaking of the variation in the symptoms in proportion to the degree of mobility.

The question of jaundice has interested me. I recently called attention to that symptom in connection with movable kidney. It is a question whether the jaundice is due to pressure upon the common duct. I believe the condition is due indirectly to a kinking of the common duct by traction.

I recall one case of hematuria, which, however, afterward cleared up, and the patient is still living and there has been no return.

The question of differential diagnosis is very extensive. I can readily see how one can be misled in a case of hydrops of the gall bladder. I once operated in such a case and over-

looked the movable right kidney. It is a question whether, under all circumstances, we would be able to differentiate between the two conditions.

The question of treatment is the most important. Personally, I have had little success with appliances. As most doctors, when the patient is averse to an operation I am inclined to advise an appliance. I cannot indorse all that Dr. Gallant says in regard to fixation of the organ by operation. Operations are not as successful as it is claimed, or we would not have so many different operations for the condition. I have gone through the number to a great extent, and for the past two years I have only fixed the kidney with gauze. As far as I have been able to follow the cases, there has not been one to become displaced. I frequently have patients consult me who have been operated upon by other surgeons, and I suppose other surgeons have the same experience with my cases.

I have the greatest objection to the suture method. Dr. Taylor will probably recall the case of a clergyman in which the kidney was transfixed with sutures. The operation was done under aseptic precautions and the man made an afebrile convalescence. Within six months a tumor developed in the region of the organ, and the man was operated upon in New York for pyonephrosis. I have since learned of two cases in which the sutures were used and which subsequently required nephrectomy in order to save the patients' lives. I know from experiment that the suture will not hold in the kidney. This has driven me to the use of the gauze, with which I have been fairly successful.

The use of the corset strikes me very favorably. I have at present a lady under my care to whom I hope to recommend the use of the corset.

DR. CHARLES P. NOBLE.—I have listened with much interest to the paper of Dr. Gallant, particularly as it brings up one aspect of the subject with which I am not personally familiar. There were a number of points noted in which my personal experience has been somewhat different from that of Dr. Gallant. I will ask the doctor what he means by "symptomatic movable kidney."

DR. GALLANT.—This term is used by Edebohls to describe a kidney which is movable and produces any of the symptoms which we recognize as due to the mobility of the kidney itself; and those were the symptoms which I designated as present in the cases which we had under consideration. Two or more were those that led me to investigate the condition of the kidney.

DR. CHARLES P. NOBLE.—I think that the majority of movable kidneys produce no symptoms at all. I consider movable kidney more frequent than has been laid down by the reader of the paper. For one year I examined every woman who consulted me, and every fifth one had movable kidney. As to the frequency with which the right and left kidneys are loose, I have never seen but one case in which the left was loose

when the right was not. The right kidney is loose about ten times when both are loose once. In my experience there is no relation between the extent of displacement and the symptoms. Very frequently a little displacement gives the major symptoms. The proper treatment, in a case with marked symptoms with but little movement, is to be put to bed and to be given the rest cure. This will cure without operation or apparatus. In my experience the frequency of complicating appendicitis has not been so great as that laid down by Edebohls. I have seen a loose kidney in fat women, but my experience is that in the majority of such patients, unless the abdominal wall is much overstretched, there is little chance for the kidney to become loose.

My experience in diagnosis differs from that of the speaker and of Dr. Deaver. I find it much easier to make a diagnosis with the patients standing, but leaning over slightly and supporting themselves on a table. I have also examined with the patient lying on the back, but should say that it was ten times as easy to make a diagnosis with the patient standing. Another advantage of the erect posture is that gravity, as well as the inspirations of the patient, tend to force the kidney down. Also, it is much easier to estimate the extent of the displacement.

As to treatment, like Dr. Deaver I have had little experience with apparatus. I have operated upon patients who have worn apparatus unsatisfactorily. So far as the older forms of apparatus are concerned, I do not know of a single one that is satisfactory. It is evident that the principles laid down by Dr. Gallant, with reference to the corset he shows removing the pressure, are an advance over the one formerly used. It is not, however, universally satisfactory, because this winter I have had a number of patients consult me for loose kidney after having worn the corset of the present mode.

Concerning operative treatment. While I have done nephrorrhaphy fifty or sixty times, like Dr. Deaver I cannot follow all the cases, but in the majority of cases the result has been permanent. The technique which I have used has been that of the suture and I have not had the disagreeable effects referred to by Dr. Deaver. My first three nephrorrhaphies were drained. All of these suppurated, and since then I have not drained and have had but one suppuration. In the use of the suture I introduce it in such a way that it makes a sling of the fatty capsule, so that the kidney rests in a sling of fatty capsule.

I should be very glad if Dr. Gallant will tell us in his closing remarks the percentage of cases in which he has seen a cure take place by apparatus.

In severe cases in which the displacement causes torsion and there is danger of renal degeneration, I think operation should be done to prevent destructive changes in the kidney itself. In the minor cases I think operation should be at-

tempted only for the relief of symptoms which cannot otherwise be relieved.

DR. B. C. HIRST.—I have nothing to add except a suggestion which I have found of some little benefit. I have for some time been in the habit of trying the systematic use of the Trendelenburg posture in cases unsuitable for operation, united with the application of the corset in that position.

DR. JOHN B. SHOBER.—I have listened with much pleasure to Dr. Gallant's instructive paper, and was particularly interested in that part of it which dealt with the treatment of movable kidney by means of the corset. I cannot agree with him that a corset such as he describes is altogether rational or desirable, as it seems to me that the constriction at the waist necessary to hold the kidney above it only exaggerates one of the chief causes of movable kidney and tends to force the in-

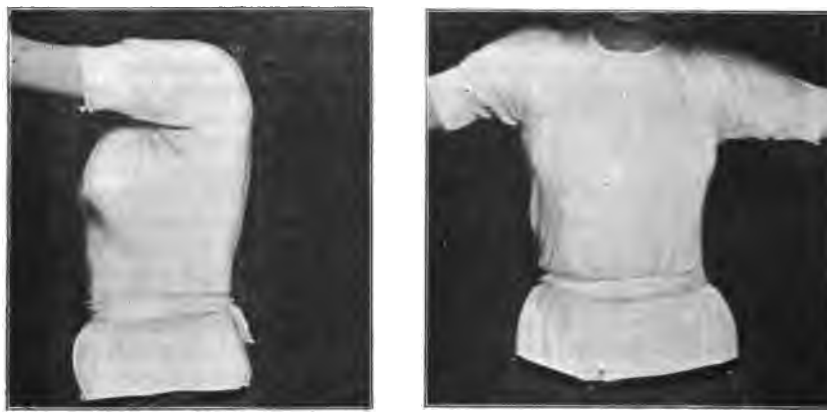


FIG. 1.

testines downward and forward, thereby increasing the enteroptosis which so frequently complicates these cases.

Absorption of the perirenal fat is the exciting cause of movable kidney, or, to put it another way, a kidney will not prolapse provided the perirenal fat is intact. Hence anything which tends to cause such absorption, or which acts in such a way as to prevent the formation of perirenal fat, is irrational in the treatment of this condition. Tight lacing or the improper use of the corset is admitted to be one of the principal causes of movable kidney, but the manner in which it acts is not, as many suppose, by a mechanical forcing of the kidney downward. I do not believe it is possible to press a kidney out of position in this way. Tight lacing undoubtedly forces the intestines downward and forward, and they in turn tend to drag the stomach, the liver, and the kidneys after them, causing also retroversions and prolapse of the uterus and adnexa;

but the principal manner in which tight lacing produces movable kidney is by interfering with and modifying the superficial and deep circulation in the loin, thus bringing about a

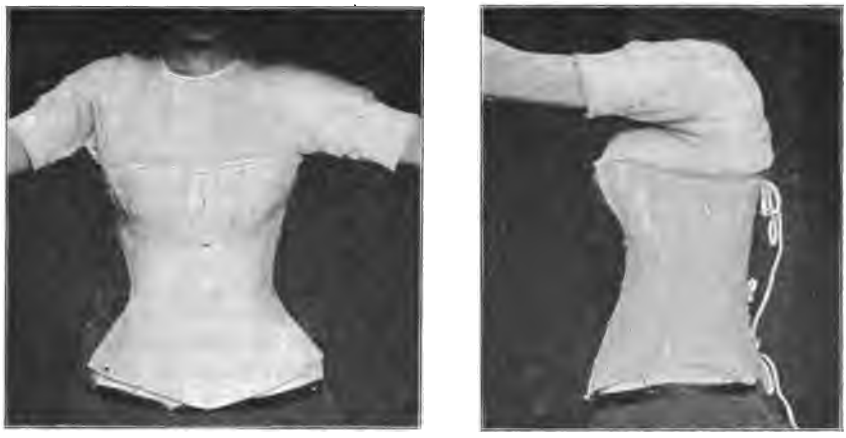


FIG. 2.

gradual absorption of the perirenal fat. This once accomplished, the kidney falls forward over the fold of the peritoneum and follows the general enteroptosis. The point I wish to make is that, even in the presence of enteroptosis, a kidney will not

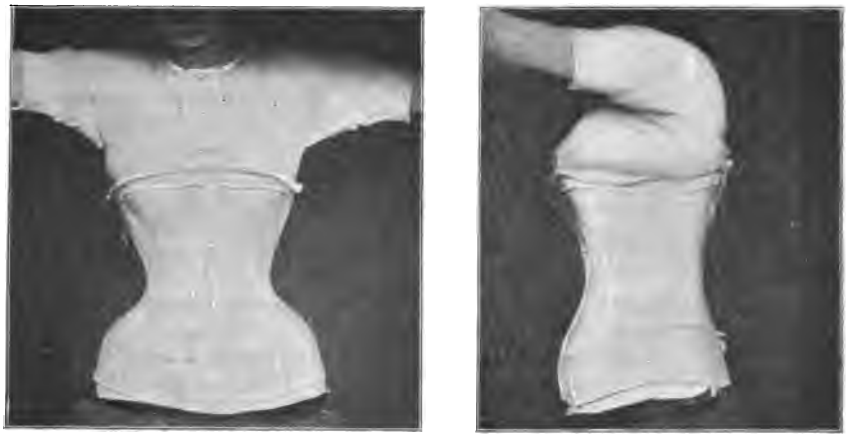


FIG. 3.

become movable unless the perirenal fat is deficient, and that tight lacing, being one of the causes of its absorption, tends to exaggerate the condition. Another cause for movable kidney,

and one which I have not seen mentioned, is, I think, the frequent distensions of the bladder which women are notoriously subject to. I believe that frequent repetition of this condition causes, by *vis-a-tergo*, a mild congestion of the kidney and an interference or stasis of the perirenal circulation, which in turn would bring about a gradual absorption of the perirenal fat and thus allow a ptosis of the organ.

I now wish to show a corset which has given me much satisfaction in the management of these cases. It was first designed by Dr. Morris J. Longstreth, of this city, for the purpose of giving support in cases of pendulous abdomen, and its applicability has been enlarged by him to many other conditions. I first began to use it some years ago in cases of large women after abdominal section, and found that it gave greater comfort and support than any abdominal belt I am acquainted with. For the past five years I have used it in cases of movable kidney with satisfaction to my patients. While I do not claim that it will hold a kidney in place, it gives more relief and comfort to these cases than any belt or pad. It is simply a broad canvas belt sewed to the lower edge of the patient's corset in such a way that when buckled behind the belt grasps the pelvis between the great trochanters and the anterior-superior spines of the ilium. The belt thus comes slightly below the symphysis pubis, and, when properly attached to the corset, well supports the lower abdomen; at the same time it straightens the bony pelvis, which has a tendency in these cases to tilt forward and thus favor prolapse of the abdominal organs. It is important that the corset should be so laced that the greatest pressure is made over the sacrum and thorax. This is best accomplished by knotting or tying the lacings at the waist line, so as to prevent them from being drawn beyond a certain point. When this corset is properly applied the pelvis assumes a more horizontal position, the vertebral column is straightened, the whole abdominal wall is well supported, thus in a general way tending to overcome ptosis of the abdominal contents, and no undue pressure is made at the waist line, which is the great fault of all kidney belts and pads. The illustrations shown on pages 100 and 101 explain themselves:

No. 1 shows the figure of a patient who has worn a faulty corset.

No. 2 is the same patient wearing the faulty corset.

No. 3 is the patient wearing the improved corset.

Dr. J. M. Baldy.—I am not much in sympathy with the discussion of to-night. Like other fashions, I believe the corset for movable kidney is a fad. In the first place, the whole subject is merely a matter of individual judgment. All kidneys are movable. Any kidney which is not movable is a pathological kidney. The question of what is floating and what is not is purely relative. I can understand why there are few such cases in fat women. They are much harder to examine, and the kidneys are not so easily found. They are just as movable, however, if you put your hand inside the abdomen, as I am frequently able to do at operations.

As to methods of examination, I have found the erect posture most unsatisfactory because of the muscular tension.

The symptoms are largely neurasthenic and gastro-intestinal, and can most often be explained by other conditions than that of movable kidney. I have generally been able to clear up the condition without any treatment directed toward the kidney. I cannot see how any mechanical appliance can have any effect whatever. When we remember that the corset is applied to the abdominal wall, and that the kidney is fixed to a part which cannot be reached through it to the back, it seems to me that the corset as a remedy must be unsatisfactory. With the anatomical relations I cannot conceive that any fixation can be given the kidney, unless it be by lessening the intra-abdominal space, and that would be far from sufficient. I have never had any sympathy with the outcry against the corset. I do not believe it ever did harm, except in the extreme lacing, and it is the exception to-day to have the corsets laced tight. The harm done is to the back muscles; they are practically in a splint and are, of course, weakened.

In the matter of operations, from my own standpoint I would believe that the suture method was the least desirable. It is, however, a matter of technique, and the man who has acquired the most skill in one method will get better results with that than from any other. I have grave doubts whether fixation does do good in any of these cases.

Dr. John G. Clark.—In the majority of cases of movable kidney the important factor in the case, so far as the symptoms are concerned, is that of general enteroptosis rather than of movable kidney. Hence, relief through the use of the abdominal bandages or corsets comes from the support of the abdominal wall rather than from the immobilization of the kidney. As to the operative treatment of movable kidney, I am inclined to be rather conservative, and I agree with quite a number of the speakers that a movable kidney, unless giving very serious symptoms, would better be let alone. A recent research upon the blood vessels of the kidney by Brödel has led him to suggest a new suture for suspension of the kidney. Clinical experience has shown that the strain upon the ordinary suspension suture, when the patient assumes the upright posture, tends to pull them out, and it is therefore suggested by Brödel that the sutures be inserted on the posterior surface to avoid the large blood vessels, and in a triangular manner, as follows: The short curved needle is passed down into the kidney and then brought out, is again reinserted and brought out again, and again a third time, forming a triangle which acts as a snare around the bands of connective-tissue stroma. The two ends of this triangular stitch are tied into the dorsal muscle. He finds this suture bears a much greater weight than the one usually employed. I agree, however, with Dr. Deaver and others that ultimately the suture does not hold the kidney, the adhesions which form between the dorsum of

the kidney and the dorsal muscles being the real suspensory or fixation medium.

In the use of the corset as described by Dr. Gallant, I should think its value would depend upon the figure of the woman to whom it is to be fitted. In a lean, spare woman who is flat from the chest down, in my experience it is difficult to get a suspensory belt or bandage which will press on the abdomen, because it will ride up on the hip bones and leave the space over the abdomen clear. In some instances it has been necessary to have semilunar-shaped pads made to fit beneath the bandage, in order to exert pressure upon the abdominal wall. This type of case, which is perhaps the most frequent, it seems to me would be rather difficult to fit satisfactorily with corsets as described by Dr. Gallant, for they do not have the beautiful and shapely torso as depicted in his diagrams.

Dr. George Erety Shoemaker.—I think we owe a debt of gratitude to Dr. Gallant. He has presented the subject from a side not always discussed. It seems to me, however, that there are a number of patients presenting pathologically displaced kidneys who cannot always wear the corset or who can wear no corset, and they must get some other form of relief. There is the thought, too, that only as long as the present fashion lasts will the flat-front corset be obtainable or satisfactory to women. We will still have a number of cases which will demand operative relief. One reason why there are so many measures suggested is because the operation is comparatively new and the best methods are not yet developed.

In regard to the use of gauze packing kept in long enough to produce inflammation, advocated by a few surgeons, it seems to me that the only use of this packing is to produce adhesions. It is probable that the suture operations, if properly done, produce almost as extensive adhesions. If the fat is thoroughly displaced from behind and below the kidney, and if the kidney is thoroughly freed on all sides, an extensive amount of adhesion is produced without the gauze, which tends to produce an infected wound. A very important part is this proper displacing of the fat.

Appliances, in my experience, have little effect upon the floating kidney, especially when the type is extreme. In many of these cases it is the enteroptosis which produces most of the symptoms, and it is in such cases that the corset is likely to give relief.

In diagnosis the erect posture is the one preferred, but the patient must lean forward on the hands and the clothing must not threaten to fall off. Hematuria is a point of some interest. It is not sufficiently impressed upon us that hematuria may be a symptom of floating kidney. It has occurred to me to see it repeatedly where there were no other lesions except those secondary to displacement.

Dr. Gallant (closing).—I feel much gratified at the dis-

cussion and will try to answer some questions. I had to turn over so many leaves of the manuscript that many questions which have come up in the discussion were not dwelt upon in the part of the paper read.

I would like to ask Dr. Baldy how many times he has put corsets on a woman for the actual relief of movable kidney. If the doctor will answer that I will feel more at liberty. (Dr. Baldy replied that he had not put them on at all.) I believe that is the reason the doctor condemns the use of them, because he has never tried and proved their use and never studied the actual effect of the corset when on. He has never studied it day after day and in some cases for five years, seeing it at frequent intervals. I have noted the changes of lacing the corset an inch or more at one point or the other, and in that way I have learned to adjust a corset. It cannot be put on the first time as it should be worn; nor can you have a patient buy a corset and put it on in such a way that it will cure the condition. I have been working at the subject for seven years.

I do not know how many cases have been cured. I have gone over 1,900 cases. The paper represents 1,000 cases as they come to the hospital.

As to the frequency of the occurrence of movable kidney, there is a wide difference in opinion. Alhehand takes the ground that every kidney is movable normally from three to five centimetres. Another says five out of seven of all women have movable kidney. Edebohls says that 20 per cent have movable kidney. Then the majority of examiners say that four to five per cent of all women have symptomatic movable kidney. Dr. Baldy has never seen a case of real movable kidney. The suffering that a woman can go through that is relieved within an hour after the kidney is put up is something astonishing. Any man who ever saw a case of real movable kidney will not refute that.

I only referred to an examination in the recumbent position as a simple method in case of suspected movable kidney, not as a means of making a definite diagnosis. The most favorable posture, I find, is to have the patient lean over a chair. Another plan is to have her sit down on a chair and rest the elbows on another chair.

In one case mentioned, that which confirmed the diagnosis of movable kidney rather than that of gallstones, there was an empty gall bladder. Had gallstones been in the duct the bladder could not have been empty.

The use of the stomach tube is essential in some of the cases. Women with chronic gastritis for years, due to the movable kidney, will not be cured at once by the putting up of the kidney. The organ is out of order and we have to apply the proper remedies.

It has been said that every man who opens the abdomen should put his hand in and examine the kidney. No man can tell whether the kidney is symptomatic when the patient is

under ether. We do not find movable kidney after death, because there is postmortem hardening of fat which holds the kidney in place.

The knee-elbow position I always recommend, and also use it for diagnostic purposes. I have never been able to make out a movable kidney when the patient stands perfectly erect.

As to a special corset, I have been asked why I never invented such a one. I have had letters from various sections, from cranks and corset manufacturers, from parties who invented corsets, and I thought it would be a profitable business to start in myself. I have not done so because perhaps but a small percentage of those who suffer from movable kidney could afford to have a corset made to order. Personally, I have only once put on a corset made to order. I have sent the patients to the shops and told them to get a long-front corset and a corset two sizes too small. If you do not learn how to lace a corset, do not try to put it on, because you will fail.

THE RELATIVE MERITS OF THE DIFFERENT METHODS OF PERFORMING PANHYSTERECTOMY IN MALIGNANT DISEASES OF THE UTERUS.

Dr. B. C. Hirst.—With the exhibition of this specimen of malignant adenoma of the uterus I wish to elicit a discussion on the four methods of removing the uterus: by vaginal hysterectomy, by abdominal hysterectomy, and by combined hysterectomy, beginning by the abdomen and ending by the vagina, and *vice versa*.

My own preference is for the last mode of operation. To no one of these plans, however, can one adhere rigidly without exception. The last method has several advantages. It enables one to make a clean and neat operation in every way. It is possible to inspect the pelvic glands and to remove them if necessary. The operation has none of the disadvantages of the vaginal hysterectomy, and the woman's convalescence is much more satisfactory in every way.

Vaginal hysterectomy for malignant disease had its origin when the technique of abdominal work was not as good as it is to-day. Therefore, if there were no other advantage, vaginal operations gave better results than abdominal operations yielded then, but that is not the case now.

The specimen is that of a uterus removed from an old lady 66 years of age, for adenocarcinoma of the endometrium.

Dr. J. M. Baldy.—The method which Dr. Hirst speaks of as one of preference is the one which we almost all use. I use it myself in very stout women. In those patients it is very difficult to make complete removal from below or from above alone.

As to removing the pelvic glands, I do not believe the man lives who can remove them thoroughly by the operation proposed, and if not thoroughly removed the attempt is useless.

We hear a great deal about removing the pelvic glands in hysterectomy, but I have the first man yet to demonstrate to me that he can do it (in reasonable enough time to warrant the attempt and save the patient), and I challenge the demonstration.

DR. JOHN B. DEAVER.—The subject of the combined abdominal and vaginal operation is interesting to me. An advantage in the abdominal route is that we can follow out the uterine arteries. I believe there is risk of infection when you do first the vaginal operation and then resort to the abdominal route. The danger is lessened, of course, if the operator changes his gloves.

It is a question of selection of cases. I cannot see any advantage in the vaginal operation for carcinoma of the cervix. I believe that carcinoma of the cervix, in the majority of cases, had better be let alone. So far as radical operation is concerned, I think as much is promised by the thorough use of the cautery and curette. I have known women to live four years after such treatment, but not so long after abdominal hysterectomy for carcinoma of the cervix. Carcinoma of the fundus of the uterus is a proper condition for vaginal hysterectomy. I have done this operation in from five to seven minutes by the clamp method. The abdominal operation takes half an hour.

So far as dissecting out the glands, that can be done, but it requires a great deal of care. I believe comparatively few men are capable of taking out the glands. After they have been invaded there is little use, however, in dissecting them.

As to the question of infection, I believe it is possible to infect a patient in another part of the body, and therefore the utmost precautions should be taken.

DR. C. P. NOBLE.—I think the proper method for cancer of the uterus depends upon the character of the case. The method used by Dr. Hirst in the cases described is very satisfactory. In my experience it has given beautiful results. All the patients are living, with but one exception. The prognosis is very good by either the vaginal or combined operation.

On the other hand, we have little hope of the cases of cancer of the cervix, whatever operation is used. I did think I had cured one case, because the patient lived four years. She afterward developed cancer.

I have been much impressed with the statement that much better results were secured if the cautery were used to separate the cervix from its attachments. I recently had a patient who was a typical example of the advantage of the use of the cautery. I operated at the earnest request of the family doctor. Abdominal operation was attempted, but the patient collapsed. The uterus was removed, but the cervix left in. I concluded that the only feasible way to remove the cervix was to burn it out. From the number of good results from the cautery I am inclined to its use when the cervix is involved.

Stated Meeting, May 16, 1901.

JOHN C. DA COSTA, M.D., *in the Chair.*

DR. CHARLES P. NOBLE reported

AN OPERATION FOR APPENDICITIS COMPLICATED BY DIABETES AND NEPHRITIS.

Mrs. R., aged 26, mother of two children, consulted me February 8, 1901, complaining of pelvic pain and general debility. Her youngest child was 5 months of age. Menstruation was regular and normal. On examination there were found a subinvoluted enlarged uterus and moderate laceration of the perineum. On April 5 she consulted me, complaining of sharp pain in the right groin, most pronounced over McBurney's point. Her pulse was 80 and temperature 99° F. Appendicitis was suspected and she was put to bed. The following day the diagnosis was evident and operation was advised. As she was nursing her baby and the symptoms were not urgent, operation was not accepted until the 7th, and was performed on the 8th. The highest temperature before operation was 100° F. The enlarged appendix could be plainly palpated through the relaxed abdominal wall. Examination of the urine at this time showed a specific gravity of 1024, sugar 0.55 per cent, but was otherwise negative. As the patient did not present any of the symptoms of diabetes, the appendix was removed.

The operation was performed through an incision through the right rectus muscle. The appendix was so thickened that it was not possible to bury the stump, owing to infiltration in the walls of the cecum. Because of the unsatisfactory character of the stump a gauze drain was used. From the standpoint of the abdominal wound the patient made a smooth recovery.

The urinary findings were of decided interest. The urine passed on the 8th contained 0.75 per cent of sugar; on the 9th (the day following the operation), 1.66 per cent of sugar, specific gravity 1034; on the 10th, 0.75 per cent of sugar, also hyaline casts, specific gravity 1040; on the 11th, 0.62 per cent of sugar, many hyaline and granular casts and a few blood cells, specific gravity 1032; on the 12th, 0.5 per cent of sugar, hyaline and granular casts, specific gravity 1030. From the 12th to the 15th the number of casts decreased and the sugar remained constant at 0.5 per cent. After the 15th no more casts were found. On the 18th the sugar had diminished to 0.1 per cent, and on the 27th

sugar had disappeared and the urine was normal, with the exception of a few leucocytes.

On the 12th, at the height of the attack of acute nephritis, the temperature reached 102° and the pulse 102. This febrile condition subsided with the nephritis.

The chief point of interest in the case is that the operation was performed notwithstanding the existence of a moderate degree of glycosuria. This is the fourth case I have operated upon when glycosuria was present. Two of the others made good recoveries and one died of diabetic coma.[1] This experience, together with my knowledge of that of other surgeons, has caused me to hold the following conclusions:

A moderate degree of glycosuria, about one per cent, is not a positive contraindication to operation.

If the patient's general condition is good and the symptoms of diabetes are not pronounced, and if the indication for operation is marked, it should be undertaken.

The prognosis is necessarily graver than in cases free from glycosuria, because of the ever-present risk that the shock of the operation may aggravate the diabetes and cause death from diabetic coma.

DR. JOHN C. DA COSTA.—I would like to ask Dr. Noble what was the amount of urine passed.

DR. NOBLE.—The amount of urine never became excessive.

DR. J. M. BALDY.—The diabetic feature of these cases struck me as of unusual interest. In a previous report before this Section I held that such conditions were not contraindications to surgical operation when such operation was demanded. If the suffering of the patient was great I had no hesitation to operate in the presence of diabetes. I would go further than Dr. Noble and would not hesitate to operate in the presence of three or five per cent of sugar. I have operated upon some half-dozen cases in which there was diabetes, and in some the condition was quite far advanced. I have seen no unfavorable results. At the discussion following the report of my cases I was about the only one holding such views. I remember Dr. Noble speaking of one case that had died of diabetic coma. I am glad to notice that his more recent experience bears out my views.

DR. ERCK.—Dr. Baldy will remember two cases, operated upon last spring, both of which were in nursing women, and in whom there was a glycosuria of about one per cent, which disappeared within a week after operation, by which time milk secretion had been arrested. The case reported by Dr. Noble had a low percentage of sugar in the urine, other symptoms of diabetes were absent, and his patient was also a nursing woman. Such cases should not be classed as diabetic, but simply as cases of temporary glycosuria in nursing women in which the sugar disappears at the end of lactation.

[1]Noble, C. P.: Three Operations upon Diabetic Patients. THE AMERICAN JOURNAL OF OBSTETRICS, 1899, vol. xxxix., No. 2.

Dr. John H. Girvin.—I did not hear the age of Dr. Noble's patient, but I would say I think the question of diabetes, or the presence of sugar in the urine, depends, in effect, upon whether the condition is one of true diabetes which occurs in young people, or the glycosuria which appears in many cases during the menopause or after 40. I have seen two cases operated on after 40 with glycosuria and no bad results followed. The only cases I can recall with bad results were those in which operation was performed on diabetic cases in younger people who had what might be called true glycosuria, with the symptoms of diabetes, the large amount of urine, thirst, and other conditions usually present.

Dr. John C. Da Costa.—I do not hesitate to operate upon a patient with a small amount of sugar, but should not care to operate in the presence of a large amount of sugar, particularly if there was much albumin or many casts. I asked Dr. Noble the amount of urine, thinking it has much to do in deciding whether operation should be performed. In one case showing marked diminution of urine proper treatment was instituted and the amount of urine increased from seven ounces in thirty hours to nineteen ounces in twenty-four hours, and in a few days to over thirty. In such a case I would hesitate to give ether or to operate at all until the condition was improved.

Dr. Noble (closing).—Some time ago, when I made the report of the cases and we had a discussion on the subject, the attitude which I took was exactly the same as in this paper. Those three cases were all older women; in none of them were the symptoms of diabetes at all marked. One case, in which the amount of sugar was considerably greater than the others, died. In that discussion two cases were reported in which after rather trifling operations the patients died of diabetic coma. I think it is undoubtedly true that in true diabetes the combined influence of the anesthetic and shock increases the diabetic symptoms. In my own practice, unless the indications for operation were urgent, I would be inclined to treat the diabetes if the amount of sugar were over two per cent. It has been my experience that codeia and diet have a marked effect upon glycosuria. In one case the sugar disappeared not only after the cessation of lactation, but on antidiabetic diet and codeia. The influence of lactation has occurred to me. I feel that we should operate when the indication is marked, but I would not have such an optimistic view of the situation as that indicated by Dr. Baldy.

I think glycosuria is not common. All of my patients operated on have had the urine examined and in the entire number there have not been more than six cases of glycosuria.

Dr. J. M. Baldy.—My remarks were in regard to cases of true diabetes. The cases Dr. Erck speaks of were operated upon since the discussion mentioned. In the cases operated upon there was true diabetes with the concomitant symptoms.

Dr. Charles P. Noble reported

A CASE OF HEMORRHAGE FOLLOWING ABDOMINAL SECTION, WITH REMARKS.

Mrs. S., aged 33, mother of three children, was admitted to the hospital on February 11, 1901. She complained of profuse menstruation, leucorrhea, and pain in the left iliac region dating from the delivery of her last child in April, 1898. Examination showed a laceration of the perineum and cervix, a retroversion of the uterus, and also a dermoid cyst of the left ovary the size of a small orange.

She was operated upon February 13. The operation consisted of curettage, trachelorrhaphy, perineorrhaphy, left salpingo-oöphorectomy, and hysterorrhaphy; the duration of the series of operations being fifty-five minutes. She stood her operation well and was put to bed in good condition. The left salpingo-oöphorectomy was a very simple operation, the mesosalpinx and mesovarium being particularly lax, so that the pedicle was easily secured, and the button left was larger than usual. Because of the flaccid character of the tissues, the classical Thomas tie was used for the pedicle.

Some time (two hours) after the operation the patient was found to be profoundly shocked, with a failing pulse which did not respond to stimulation, indicating clearly that she was suffering from internal hemorrhage. Preparations were at once made to reopen the abdomen, but before this could be done the pulse had almost disappeared at the wrist. Hemorrhage was due to retraction of the uterine end of the pedicle, probably induced by the hysterorrhaphy sutures. The pulse at the conclusion of the operation was 160 and scarcely to be felt. Under full stimulation, including hypodermoclysis, reaction ensued. On the second day the pulse had dropped to 120, on the fourth day to 98, and on the fifth day became normal, after which convalescence was uninterrupted.

The case is reported for the purpose of making some remarks upon the subject of hemorrhage following operation. Eleven years (April 19, 1890) have elapsed since this accident has occurred in my practice, during which time 1,275 abdominal sections have been performed. The first case was one of double ovariotomy with edematous pedicles, hemorrhage being due to the fact that one of the ligatures was not tied sufficiently tight. The first patient also made a good recovery after reopening the abdomen and securing the bleeding point. This experience indicates that with care so-called secondary hemorrhage after operation can be made one of the rarest of surgical accidents. This statement does not refer, of course, to slight oozing from torn adhesions, but to hemorrhage from defective ligation of pedicles. Secondary hemorrhage is to be prevented by so placing the ligatures that they will secure the trunks of the vessels supplying the field of operation. In salpingo-oöphorectomy one ligature should secure the ovarian artery and one the anastomosing

branch of the uterine and ovarian arteries. These ligatures should be so placed that they are independent of any others which may be needed in the particular case in hand. It was the failure to act upon this principle which led to the hemorrhage in the case reported. The mesosalpinx and mesovarium being so unusually long and flaccid tempted me to resort to the classical method of ligation, but, when the uterus was drawn up to the abdominal wall and sutured, enough tension was created to cause retraction of a part of the stump. In hysterectomy security against hemorrhage is even greater than in salpingo-oöphorectomy, as the four main arterial trunks can be easily secured. The question of ligature material, in my judgment, plays a very small rôle in the prevention of hemorrhage. In about half of my cases silk has been used, and in the other half catgut, with equally good results. The result depends upon the care with which the operator ties his ligatures rather than upon the material employed.

Dr. J. M. Baldy.—I think one of the most distressing deaths I ever had following operation was similar to that reported by Dr. Noble, death following removal of the ovary on one side with hysterectomy. The case occurred in my experience half a dozen years ago. There was sudden dropping of temperature with rising pulse. The abdomen was opened upon the recognition of the hemorrhage, but there had been too much loss of blood to save life. The conditions were much the same as those in Dr. Noble's case; the ligature on the ovary had been apparently satisfactory, but in drawing up the uterus to the abdominal wall traction weakened the ligature and caused hemorrhage. I have always placed an extra ligature on each side of the stump since then in similar cases, and if a pedicle has since slipped no harm has been done. A few weeks ago I had one of my residents do an operation of this kind, and in this operation the ligatures on both sides the stump were not placed. In a few days the temperature became high, and a mass was found bulging in the posterior cul-de-sac, apparently in the connective tissue. The patient had done badly the first night after the operation. About a pint of blood was found in the pelvic cavity. Fortunately adhesions had formed which limited the hemorrhage. The hemorrhage was checked and the woman's life saved. This was probably the first case in years in which I had failed to have the extra ligatures placed and the accident happened. It is always a safe precaution to employ the extra ligatures of which Dr. Noble has spoken, placing fine catgut or silk around both ends of the cut vessel independent of the stump.

Dr. Beyea.—Fortunately, I have never seen a case of secondary hemorrhage from slipping of the ligature in any of my own cases or those of Dr. Penrose. That is among at least a thousand celiotomies. The nearest approach to this accident which I have witnessed occurred in a similar way to that spoken of by Dr. Baldy. Dr. Penrose allowed his assistant to tie the

ligature on one side in salpingo-oöphorectomy. It was the link ligature. Just before closing the abdomen he noticed the ligature had slipped. It was again placed and tied, and there was of course no further trouble. The objection to this ligature is that the apex of a cone is tied and with the retraction of the tissues the ligature easily slips off. Since this experience we have first placed a ligature through the infundibulo-pelvic ligament just a sufficient distance to include the ovarian artery with a small amount of tissue, and another at the uterine cornu, also containing only sufficient tissue to include the ovarian artery. The tube and ovary are then cut away, and if bleeding occurs between the two ligatures the point is caught up and surrounded by a suture of finer material and ligated. There is no tension on the ligature, and with retraction of the tissues it cannot possibly slip. Of course it is important to leave a good-sized button of tissue beyond the ligature. Another point is that the stump should always be carefully inspected with the pelvis lowered before closing the abdomen.

Dr. John C. Da Costa.—I have been extremely fortunate in my operations in not having the ligature slip, and do not remember a case of secondary hemorrhage. In the beginning of my experience this may have been the result of good luck, but of late years I make a button on the stump. After tying the ligature tightly I whip the peritoneum over the stump, catching all the vessels I can. This takes but little time, and the result is a rounded button above the ligature, over which the ligature cannot slip and which does not form adhesions. If any blood oozes out it soon forms a clot and the bleeding ceases. I do not know that the procedure is entirely original with me. I remember that Dr. Kelly advocated a somewhat similar plan at the meeting of the Obstetrical Society ten or twelve years ago. His suggestion was to leave the stump so long that the ligature would not slip over it.

Dr. Noble (closing).—In this case the pedicle was so long that it seemed safe to use it. The best principle to be followed is to secure the vessels without tension.

Dr. Noble also presented

A CASE OF CYST OF INFLAMMATORY ORIGIN ANTERIOR TO THE UTERUS; A SEQUEL OF HYSTERORRHAPHY.

Mrs. D., aged 44, a nullipara, consulted me March 18, complaining of backache, legache, of being easily tired, and of a post-operative ventral hernia. She reported that a hysterorrhaphy had been performed four years before, and that following this operation from time to time three abscesses had formed, two of which had discharged from the abdominal wound and one through the vagina. On examination, in addition to the post-operative ventral hernia, the uterus was found enlarged, semi-cystic, and fixed to the abdominal wall. The cause of the elastic "feel" of the uterus was obscure, as cystic degeneration of a

fibroid tumor no larger than the uterus in this location is extremely rare.

Abdominal section was performed May 4. When the abdomen was opened, what appeared to be a subperitoneal cyst was found anterior to the uterus and occupying the space which normally contains the full bladder. A cyst of inflammatory origin was suspected, but it was thought best to attempt its extirpation. After separating the cyst from the uterus for some distance, it was ruptured, when it was apparent that the cyst was one of inflammatory origin, its walls being made up of the uterus behind, the bladder in front, and the vaginal wall below. The wound in the cyst wall where it had been separated from the uterus was closed by two layers of catgut sutures, first packing the cavity of the cyst with gauze. The operation was concluded by performing hysterorrhaphy and by repairing the ventral hernia. The final step in the operation consisted in incising the anterior vaginal wall in front of the cervix and making an opening into the cyst cavity from below, drawing some of the gauze into the vagina for drainage. The patient has made a smooth convalescence, and the final cure must depend on securing obliteration of the sac through dependent drainage.

The case is reported as constituting one of the rarer accidents in connection with hysterorrhaphy. Every surgeon has frequently met with cysts of inflammatory origin in various parts of the peritoneal cavity, but this is the only one having its location in the utero-vesical pouch with which I am familiar.

Dr. C. H. Judd read some

NOTES ON A RECORD OF EIGHT HUNDRED AND FIFTY CASES OF ETHERIZATION.

The physical examination included heart, lungs, and urine. Drawing my opinion from these cases, ether is a safe anesthetic in any compensated heart murmur and in many murmurs only partially compensated for, the pulse rate, volume, and muscular sound of the heart very frequently improving after complete anesthesia; this was most marked in cases coming to the table in partial shock, also in hysterical women with organic or functional murmurs.

The gauze method, a chloroform dropper, and oxygen were used in all cases. Oxygen increases the amount of ether required for the entire operation but slightly, if at all, and decreases the number of cases of vomiting and shock very materially.

Intelligent patients undoubtedly take the anesthetic with more comfort to themselves and the etherizer if they are told what to expect; in this way the time and amount of ether to produce relaxation can usually be diminished, and there is also much less mental and physical excitement.

The average time to produce complete etherization was from ten to fifteen minutes, over seventy-five per cent requiring a quarter of an hour. This time limit has become of value in de-

termining when the patient is ready to be operated upon. To reduce the time below this average, except in a few cases, a great increase in the quantity of ether would be necessary and much additional discomfort to the patient. It is often advantageous to allow five minutes more for this stage. The time required is further influenced by the peculiarities and physical conditions of the individual. As an example of physical conditions, a septic case was ready for operation in six minutes; a number of hysterical women required from twenty to twenty-five minutes. Consciousness is nearly always lost in ten minutes.

The amount of ether to produce complete anesthetization has varied from one to two ounces, the usual quantity being two ounces. This also varies with the physical and mental conditions of the patient and with the body weight.

It is important to give the anesthetic slowly at first, and to lift the gauze from the face a number of times during the first five minutes. These points aid in increasing the comfort of the patient and in decreasing the physical and mental excitement.

The average entire amount of ether for laparatomies has been three and one-half to four ounces. Curettements were usually finished with from one and one-half to three ounces. One Cesarean section was completed with three ounces.

The after-effects in this series have been encouraging. Vomiting has occurred in ten per cent of cases who have completely returned to consciousness. There has been no case of serious inflammation of the respiratory tract; one case of kidney trouble, but of doubtful relation to the ether; no deaths.

In conclusion, I would like to mention a primary relaxation which appears just after consciousness is lost, and is suitable for short operations; also the effects of temperature, atmospheric pressure, and quality of the ether upon the total amount required.

Dr. J. M. Baldy.—I believe that every institution ought to have a paid anesthetizer and that anesthetization by internes ought to be stopped. Many deaths put on the records as due to kidney or heart troubles are undoubtedly the result of faulty anesthetization. A delay of from fifteen minutes to an hour in beginning an operation is a very ordinary thing. Sometimes there are reasons for it and sometimes there are not. The condition of the patient herself, and the confidence with which she goes into the hands of the anesthetizer, have much to do with the effect of the anesthesia. You cannot expect a man just out of college to give ether intelligently. It is a matter requiring as much skill as the operation.

In the question of heart murmurs and conditions of the kidneys my conclusions are much the same as those of Dr. Judd. I have had more trouble following enlargement of the thyroid gland than from anything else.

I use the Allis inhaler. The gauze mentioned by the doctor is good only in the hands of an expert. I agree with the doctor

that a talk with the patient beforehand will do much to lessen the trouble. It is well to apply the cone without any ether at first. The method principally in vogue is saturating the ether cone and drowning the patient with ether. It is a rare case in which the ether does not at some stage fall on the face. The habit of putting the fingers in the eyes is abominable. We can tell perfectly well by the laxness of the muscles and the breathing of the patients the degree of anesthesia present. The necessity to grasp the tongue with the forceps seems to me to indicate faulty etherization and a custom which the anesthetizer ought to be ashamed of. I believe that every institution ought to have a paid anesthetizer as well as a paid pathologist. The lung and bronchial complications I consider more important than any others in relation to the anesthetization.

Dr. Beyea.—I agree that every hospital ought to have a paid anesthetizer. It has been my experience that while some men are capable of giving ether so that no complications occur, others have complications in many of their cases. The best method of administering ether cannot be taught, nor does it depend upon a particular inhaler or the amount of ether given, but it is the personal element that makes the successful anesthetizer.

Dr. William R. Nicholson.—I do not entirely agree with all the sentiments expressed. I do believe with Drs. Baldy and Beyea that every institution ought to have a paid anesthetizer. I do not see, however, where the present race of anesthetizers is to come from, unless the internes are trained to give ether. I have given ether and learned to give it in general hospitals, though the knowledge has been refined in special hospitals.

Regarding the cases with complicating pneumonia and bronchitis, I think if these cases were carefully observed before ether was started it would be found that there was lung and bronchial disturbance at the time.

I agree with Dr. Baldy that touching the eye is a barbarous method, as is also that of grasping the tongue. The size of the pupil will give a better knowledge of the condition of the patient than the muscular relaxation. I think the necessity of pulling the tongue forward with forceps ought to be looked upon as a surgeon looks upon death from hemorrhage, as something to be ashamed of.

Dr. John H. Girvin.—I have been interested in the question of securing a paid anesthetizer for the Presbyterian Hospital, and I am perfectly convinced that in the large general hospitals it is just as important to have this special officer as any other member of the staff. There is no doubt but that the mortality in major operations, the abdominal operations particularly, is increased by the way ether is given in ordinary hospitals. It is very well for the resident to acquire some knowledge in this respect, but he can acquire it, with much better results for the patient, from a paid anesthetizer than by unaided experience.

I think Philadelphia has long needed a man who would de-

vote himself practically to the administration of anesthetics. I hoped that the discussion would bring up the question of some of the different forms of giving anesthesia at the present time.

I have never had any experience except with the Allis inhaler, which I have felt was the safest method. As much harm cannot be done with it as with many of the other forms of inhalers. In looking over records kept for some years, I have copied some statistics from a record of fifty consecutive abdominal operations in which I had given the anesthetic with the Allis inhaler. The average amount of ether to produce complete anesthesia was three and one-third ounces; average time was twelve and one-half minutes. Out of those fifty cases, only six cases required over fifteen minutes. The highest time required was twenty minutes. The average total time under the anesthetic was sixty-three minutes, and the average amount of ether seven and two-thirds ounces, which would mean one ounce for every twelve minutes after the patients were put under ether. There were no complications in any of these cases. I think the result of the anesthesia, as that of the operation, depends on the technique. I agree with Dr. Judd in the importance of gaining the confidence of the patients, describing to them what is to take place and telling them how they may overcome it. Beginning the anesthesia slowly, or at first using no ether on the inhaler, is advisable. After the first choking sensation is passed the ether can be put on as fast as necessary. The forceps for the tongue should be practically never necessary.

I believe that in all the pneumonia and bronchitis complicating anesthesia cases there has been previous congestion. This is also true in cases of intense secretion of mucus. I agree that heart murmurs are not contraindications for the administration of ether. In kidney conditions showing casts the length of the administration should be considered. Such cases are followed by diminished secretion of urine with the consequent ill effects. If there is absolute necessity I think ether may be given. In many cases where a plastic operation is to be done, a few days will sometimes clear up the kidney condition and ether can be taken very well. In four cases operated upon within the last two months where an excess of ether was used, there was diminished secretion of urine with headache, nausea, and vomiting. One only had albumin in the urine, but ether was administered.

Dr. J. M. Baldy.—I have seen hundreds of cases of bronchitis with no bad effects following etherization. I believe that but few of those cases are the ones that result in death. Those which show ill effects are, I believe, badly congested at the time of etherization.

In the Gynecean Hospital one man gives all the ether. We have had but two or three anesthetizers in the institution in more than ten years. Great delay is caused in getting the patient on the table where untrained men are employed, and there are often long periods of waiting before the operation is completed.

Sometimes even in closing the abdomen the operator may have to wait five or ten minutes. Five or ten minutes may mean the life or death of the patient. The young man should be trained by a skilled anesthetizer, standing at his side at first and gradually, under instruction, assuming full control of the etherization.

Dr. John H. Girvin.—The question of time is of the greatest importance to the patient, but it is also often very important to the operator. A certain average of time in putting the patient under ether will save a great amount of time to the operator. Patients require an almost equal length of time to go under the anesthetic. Judged from the statistics, only two took under ten minutes, only six over fifteen. In sixty-five per cent of the cases the pulse was lower and better when the patient was brought off the table than before ether was administered.

Dr. John C. Da Costa.—I think the Section is much indebted to Dr. Judd. While it is most desirable for an institution to have a paid anesthetizer, yet I have had some unfortunate experiences with regular anesthetizers in general hospitals. I have had, too, I might add, better etherization in one or two cases during the past two weeks from trained residents than from a regular anesthetizer.

Before operating I examine the heart, lungs, kidneys, and, in short, make a thorough examination, and would hesitate very much, unless the case were urgent, to give ether to a patient with pneumonia or bronchitis. I have a case now under treatment in which the woman's lungs were perfectly sound before operation, but within twenty-four hours after an acute bronchitis set in. On examination it was found that her lips and nose were raw from ether which had been poured through the inhaler on her face by the regular anesthetizer. I think it will be found, as a rule, that trained resident physicians administer the anesthetic very well.

While not afraid to give ether in the presence of heart troubles, I would hesitate to give ether to a patient with chronic Bright's disease where there was much albumin in the urine or many casts. I have great faith in cocaine as a diuretic in overcoming diminution in the urine.

Dr. Judd (closing).—I think the advantage of the gauze over the inhaler is that the patient receives every drop of ether put on it. In the Allis inhaler the patient may get a great deal or none at all.

Dr. John C. Da Costa.—I would like to ask if Dr. Judd has ever seen Dr. Allis use the inhaler. If so, he would see that little ether is lost and that none of it goes on the face of the patient. He gives the ether drop by drop, and begins the etherization by holding the inhaler himself or by giving it to the patients. He gains their confidence and they go quickly under the influence of the ether without any mental excitement.

Dr. H. D. Beyea presented a paper on

THE CONSERVATION OF THE OVARIES AND FUNCTIONATING UTERINE TISSUE IN THE OPERATION OF HYSTEROMYOMECTOMY

THE treatment of myomata, fibromyomata, or fibroid tumors of the uterus has followed in its development the growth of abdominal and pelvic surgery. In the days when celiotomy was a dangerous operation the advice given by teachers of gynecology was: to watch the uterine myoma, never operate, treat symptoms, and trust to the menopause for cure. When salpingo-oöphorectomy could be safely performed, this was the treatment practised. Salpingo-oöphorectomy was in turn replaced by hysteromyomectomy with retroperitoneal treatment of the stump, which now for ten years has remained the operation of election in the large majority of myomata requiring radical treatment. The perfection of surgical technique, and better understanding of the principles of antisepsis and asepsis, during the last few years has resulted in greatly reducing the danger of this operation. I think it may be truthfully said that the mortality of hysteromyomectomy in a long series of cases, as performed by the best operators in this country, is often as low as two per cent. This radical method of operation having reached such a degree of success, the surgeon seems to have turned his attention to the development of more conservative methods of treatment of these tumors. The result of this effort has been that during the last three or four years many surgeons have advised and practised enucleation of myoma or myomata of a certain class, leaving the uterus, tubes, and ovaries intact and thus preserving the functions of these organs. This latter operation, myomectomy, is much more dangerous than hysteromyomectomy, and is for this and other reasons condemned by many of the best surgeons, but there is no doubt that its performance is safe and warrantable in a few cases.

Therefore the two operative methods which are now advised and practised for the removal of myomata of the uterus through an abdominal incision are hysteromyomectomy and myomectomy.

The selection of either the one or the other of these operations in a given case, where the woman is young, has not reached the menopause, is dependent upon the extent of pathological destruction of the uterus by the tumor and the presence or absence of associated disease of the tubes and ovaries. Myomectomy, according to the strongest advocates of this operation, is applicable only to isolated pedunculated tumors, and some isolated sessile, interstitial, or broad-ligament growths so disposed

that they can be readily excised or shelled out of their bed without undue injury or loss of uterine tissue. It is also necessary that the tubes and ovaries be normal. All myomata not coming within this class are removed by the operation of hysteromyomectomy, in which operation the uterine body to the internal os or including part of the cervix, and both tubes and ovaries, are excised.

About a year ago it occurred to me that there must exist a class of myomata of the uterus where the actively conservative operation of myomectomy could not be performed, the destruction of tissue by the tumor was too great, and the actively radical operation of hysteromyomectomy, as now performed, unnecessarily removed functionating uterine tissue and normal tubes and ovaries. The class of myomata which I refer to are those which destroy the upper three-fourths, two-thirds, or less of the uterine body, and the tubes and ovaries to either side are normal. The method of operation which suggested itself to me was to leave both tubes and ovaries intact, both ovaries or one ovary, depending upon the pathological condition of these tissues, and to amputate the uterus at the highest possible point, so that a portion of the uterine body lined with corporeal endometrium, even though it be small in amount, would be left in the stump.

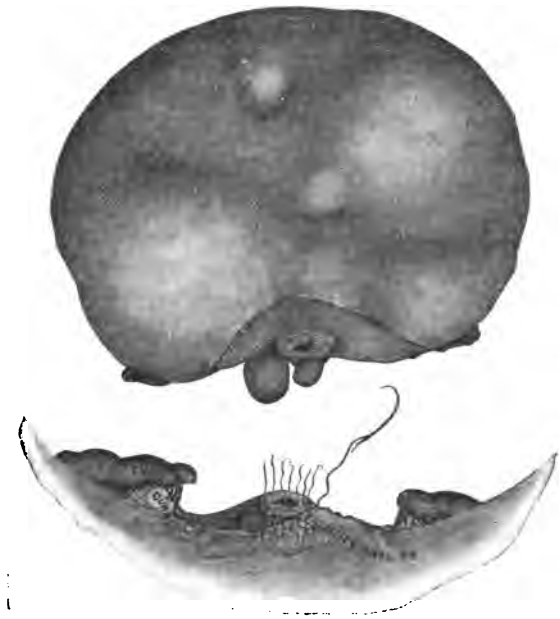
The object of this operation would be the conservation of normal, at least clinically normal, ovaries and uterine tissue to retain the physiological relation between these tissues, thus preserve the functions of ovulation and menstruation, and prevent the artificial menopause and its sequelæ. Further, there is a growing belief that the ovary secretes a substance which is absorbed and consumed in the animal economy, and which is necessary to it in retaining its physiological balance;[1] and if this be true, then the preservation of such ovarian internal secretion would be another object of this operation.

In looking over the pathological histories and very accurate illustrations of myomata we had removed during the last eight years, I found that this class of tumor which I have described occurred relatively frequently, and I was more convinced that, if practicable, such an operative procedure would be a distinctly conservative method of treating many myomata. Accordingly I

[1]Knauer, Archiv. f. Gynäkologie, Bd. lx., H. 11, 1900; and Halbin, Monatschrift f. Geburtshülfe und Gynäkologie, October, 1900.

determined to put the operation into practice at the first opportunity.

On April 2, 1900, Mrs. H. B., 34 years of age, married, housewife, 0para, was admitted to the Gynecean Hospital. Her history was that, except for the usual diseases of childhood, she had always enjoyed good health until her present illness. The menstrual flow first appeared when she was 14 years of age, was always regular, appearing every twenty-eight days, slightly painful, very scant in amount, and lasted three to four days. In 1895 she first noticed a tumor growing in the lower portion of



the abdomen. It grew slowly and gave her no discomfort until 1898. The tumor then, she believes, began to increase rapidly in size, caused almost constant irritation of the bladder, and she began to complain of pain and numbness in both lower limbs. These symptoms gradually increased in severity. For a year previous to coming under observation menstruation had occurred every two weeks, and was more profuse, lasting five to six days.

A bimanual vaginal examination determined the cervix and vaginal outlet to be nulliparous and normal. The pelvis was occupied by a myoma of the uterus the size of a large fetal head.

The tumor evidently grew from and destroyed at least the upper two-thirds of the uterine body, but I believed that the lower uterine segment could be outlined emerging into the myoma mass just above the internal os. The patient requested that the ovaries and as much of the uterus as possible be left in position.

Celiotomy was performed on April 5, 1900. A myoma, growing interstitial and subperitoneal, was found destroying the uterine body almost to the internal os. Two small nodules grew subperitoneal in relation with the posterior surface of the supravaginal cervix. The tubes and ovaries were normal. The broad and ovarian ligaments were ligated on each side, so as to include the ovarian artery as it entered the tumor. The tube and ovary were thus outside the ligature. The round ligaments were ligated and the incision made through the broad ligaments. The peritoneum on the anterior surface of the tumor was incised at a higher point than is usual, separated, and displaced downward with the bladder. The uterine arteries were secured just as they entered the uterine tissue covered by the lowest nodule. A transverse incision was then made from before backward, so as to leave the greatest possible portion of uterine tissue, about two centimetres above the internal os. The two small nodules attached to the posterior surface of the cervix were then dissected out and removed. At this time I estimated that one and a half centimetres, or possibly two centimetres, of corporeal endometrium lining would be left in the cervical stump. The cut surfaces of the stump were accurately brought together by interrupted fine silk sutures, so placed as not to include or approach the endometrium. The flap of peritoneum was sutured over the stump and operation area from side to side. The abdomen was closed without drainage.

The patient made a perfectly normal convalescence and was out of bed at the end of three weeks. During the convalescence, some days after the operation and at the time of normal menstruation, there was a flow of blood from the cervix. The length of time the flow continued was not recorded.

The patient has remained in excellent health now for more than a year. A letter from her, dated April 16, 1901, states that she has menstruated regularly every twenty-eight days since the operation. She says that the flow, as she expresses it, is limited, not often lasting longer than a day. There is no pain, but sometimes she feels weak. Further, she states that she is not aware of

there being present at any time nervous symptoms which might be caused by atrophy of the ovaries.

The menstrual history of this woman previous to the development of the myoma was that the flow was always scant and lasted but three, or at most four, days. Since the operation it lasts usually but one day and is small in amount. It would seem, therefore, that since there exists now not more than one-fourth of the previously normal surface covered by corporeal endometrium, the present amount of flow and the duration of the period is relatively normal.

The conservation of the ovaries, and even a small amount of corporeal endometrium and muscle tissue of the body of the uterus, functionating uterine tissue, in the case of this woman 34 years of age, has for more than a year preserved the functions of ovulation and menstruation. That it will continue to do so until the natural time of the menopause, from the history of the character of menstrual function previous to operation as compared with that since operation, is most probable. The value of the preservation of these functions to such a woman will be apparent to every one.

I have made a careful search through the literature for the report of a similar conservative operative procedure, but without result. The only reference bearing on the subject is to be found in an article by G. Abel, published in 1898, entitled "Dauerfolge der Zweifelschen Myomectomie."[1] This is a report of the results, as determined by pelvic examination and conference with the patient from two to ten years after treatment, of the abdominal operation for myomata of the uterus performed by Zweifel between 1887 and 1894. The study of the various phases of these cases is the subject proper of his article. On page 299 he states that they have three times observed more or less regular menstruation after myomectomy. This refers to the Zweifel myomectomy, which is a hysteromyomectomy with retroperitoneal treatment of the stump; the method of controlling the blood supply of the cervical stump by continuous partial ligature *(die fortlaufende Partialligatur)* characterizing the operation as Zweifel's. These cases are as follows:

CASE I.—Frau O., 35 years of age. Right ovary left in position. Seventeen months after operation ovary normal size, not sensitive. Menses began on the fifth and ninth weeks after operation, lasted two days, was scant in amount. Then there was a

[1]Archiv. f. Gynäkologie, Bd. lvii., S. 261, 1898.

pause of five months without molimina, then epistaxis began to occur every four weeks. From the seventh to eleventh month she menstruated, and the fifteenth and sixteenth months, lasting each time three days. From this time on for two and one-half years she had had vicarious epistaxis every four weeks.

CASE II.—Frl. P., 24 years of age. One ovary left in position. The menses appeared the second, fifth, and sixth months after operation. One and one-half and two and one-half years after operation the ovary was distinctly palpable and the patient had menstruated every four weeks. The flow lasted five days and then four days. Aside from backache there were no molimina.

CASE III.—Frau W., 31 years of age. Both adnexa left in position. Five years after operation the cervical stump was fixed posteriorly; there was no tenderness; the sound entered the cervical canal for a distance of two centimetres. The right ovary was normal in size, left distinctly palpable. No indication of atrophy of the genitals. From the ninth month after operation the patient has menstruated for from three to four days every four weeks. The flow was scant and associated with some pain. In July, 1898, more than five years after operation, the patient wrote: "The period is quite regular and painless."

Although it is not so stated, it is probable that accidentally a portion of functionating uterine tissue was left in the uterine stump in these three cases, which accounts for the presence and persistence of the menstruation. It is possible, however, that they were cases of cervical menstruation, if such can exist, similar to those referred to by Ashton and Kelly.

Abel makes the suggestion that what was reached without aim in these three cases, where a more or less regular menstruation followed hysteromyomectomy in which one or both ovaries were left in position, may purposely be proved to be practicable in the future.

There are a number of questions to be considered to establish the practicability of the performance of this more conservative hysteromyomectomy I suggest for a class of myomata.

First. Of what value to a woman are ovulation and menstruation when all possibility of conception is destroyed?

In reply I would say that the functions of ovulation and menstruation alone, provided their occurrence be not abnormally painful, are essential elements to a young woman's happiness, and often to her good health. With Kelly I believe that the

pelvic organs are indelibly associated in the woman's mind with the fundamental differences between the sexes, which impress upon the female organism all that is distinctive and peculiar in her attitude toward the world at large; and with the healthy performance of her functions in the recurring monthly fluxes and ovulation, even if to only the extent here preserved, lie, though the woman be unconscious of it, some of the deepest well-springs of her happiness.

These functions are essential elements to good health, in that upon the presence and activity of the tissues which perform them depends the prevention of the distressing symptoms of the artificial menopause, its not infrequent remote sequelæ, as the neuroses and insanity, and the post-climacteric atrophic changes.

The principle of conservatism in this operation is that voiced by Schröder in 1882 when he wrote: "Vom Uterus wird nur soviel entfernt, als durchaus nothwendig ist; alles was nicht vom Myom durchsetzt ist, wird erhalten."

Second. In what frequency will pathological changes develop in such ovaries left in position?

According to Bulius (90),[1] Papow (40),[2] and Van Meerdervoort (45),[3] the ovaries in every case of myoma of the uterus, regardless of the age of the woman, show macroscopically and microscopically more or less pathological change. From the study of 185 such ovaries these investigators independently agree that the ovaries are enlarged, partially through an increase in size and number of the follicles, and partially through a hyperplasia of the interstitial tissue; the stroma tissue is frequently infiltrated with small round cells; the vessel walls show hyaline degeneration, often resulting in stenosis and obliteration of the lumen; that there is a constant premature disappearance of the primoidal follicles, and the corpora fibrosa are much increased in number. As to whether these changes are inflammatory in character, due to irritation extending from the uterus and tumor, or are simply a hyperplasia caused by blood stasis in the veins of the ovary, developing synchronously with the growth of the uterus and its neoplasm, is not as yet definitely determined. The latter view seems to be the most probable one. From a pathological

[1]Zeitschrift f. Geburtshülfe und Gynäkologie, Bd. xxiii., 1892.
[2]Centralblatt f. Gynäkologie, Bd. xiv., p. 881.
[3]Centralblatt f. Gynäkologie, No. 40, 1897, p. 1230.

standpoint, therefore, we might conclude that these changes would make imperative the removal of the ovaries with the myomatous uterus. This conclusion, however, is not supported, but is disproved, by the clinical observations of women having myomata for years, and after the operation of myomectomy, in which the functions of ovulation and menstruation are healthfully performed and conception sometimes occurs. Also, it is relatively disproved by the cases of Abel and my own case here reported, for ovulation without abnormal symptoms occurred in every instance as long as the patients were under observation.

As regards the frequency of development of secondary pathological changes in such ovaries left in position, little can be learned. It has been the custom of some operators for many years, particularly the last few years, to leave the ovaries, or an ovary, in position in performing hysteromyomectomy. Pelvic examinations have been made by Glänecke, Brennecke, and Abel in quite a large number of these cases, at intervals of from one to four years after operation, to determine the rapidity of atrophic changes in the ovaries. In none of these cases examined was disease of the ovaries found. In but two cases, as far as I can learn from a careful review of the literature, has a secondary operation been necessary for pathological lesions of ovaries left in position in hysteromyomectomy. Martin[1] in 1883 performed a supravaginal hysterectomy for a myoma, leaving an apparently normal right ovary in position. Seven months afterward he removed a cystoma of this ovary which had filled the abdominal cavity. Baldy,[2] in performing hysteromyomectomy with extraperitoneal treatment of the stump, accidentally left one ovary. Four months later he was compelled to do a secondary operation for the removal of a small multilocular cystoma of this ovary. The patient died of sepsis after this operation. From this evidence, all that can be obtained, it is reasonable to conclude that the development of secondary pathological changes will be extremely rare, at least not more frequent than the presence of new growths in the ovaries of normal women.

Third. Will secondary atrophic changes take place in such ovaries when a portion of functionating uterine tissue is left in the stump, resulting in the menopause and making the conservative procedure not worth while?

[1]Zeitschrift f. Geburtshülfe und Gynäkologie, Bd. xv., p. 240.
[2]New York Med. Journal, June, 1888, p. 721.

We are able to gain some information on this question by referring to the studies, reported in the literature, of ovaries left in position where no functionating uterine tissue was preserved in the stump, and by comparing such cases with the four where a portion of functionating uterine tissue was preserved in the stump.

From the investigations of Glänecke,[1] Brennecke,[2] and Abel[3] (fifteen cases) to determine the extent of atrophy of the ovaries left in position in hysteromyomectomy with amputation at or below the internal os, and from the clinical observations of Leopold,[4] Fritsch,[5] Howitz,[6] Thorton,[7] Hamilton,[8] Grammatikati,[9] and others regarding the influence of preservation of the ovaries in the same operation on the prevention and character of the artificial menopause, the following deductions are to be made: The ovaries are found enlarged for a few months after operation; then follows a regular diminution in size, and the atrophy is complete in the average case within three years, and in all cases within four years after operation. The artificial menopause and the atrophic changes in the external genitals, with the atrophy of the ovaries, appear later and slower, and the symptoms are milder than after oöphorectomy.

In the four cases reported by Abel, where we assume functionating uterine tissue was preserved, careful pelvic examinations were made to determine the size of the ovaries at varying lengths of time after operation. In the first case seventeen months after operation the ovary was normal in size, two and a half years after it was smaller and harder than at seventeen months, and three and a half years after he states that it was certainly only a little smaller. In the second case the ovary was distinctly palpable one and a half years after operation, and normal in size two and a fourth years after operation. In the third case five years after operation the right ovary was normal in size; the left could not be distinctly felt. The ovaries are normal in size in our case after one year.

[1]Archiv. f. Gynäk., Bd. xxxv., p. 85.
[2]Zeitschrift f. Geburtshülfe und Gynäk., Bd. xii., p. 73.
[3]Archiv. f. Gynäk., Bd. lvii., p. 295.
[4]Archiv. f. Gynäk., Bd. lii., p. 251.
[5]Centralbl. f. Gynäk., Bd. xviii., p. 1338.
[6]Centralbl. f. Gynäk., Bd. xvi., p. 812.
[7]Centralbl. f. Gynäk., Bd. xvii., p. 198.
[8]Centralbl. f. Gynäk., Bd. xviii., p. 974.
[9]Centralbl. f. Gynäk., Bd. xiii., p. 105.

It would seem quite positive, from these examinations, that as long as each case was observed, respectively one, two and a fourth, three and a half, and five years after operation, no distinct atrophy of the ovaries had taken place. This belief is further warrantable through the fact that in all the external genitals were free from any indication of atrophic change, there were no symptoms of the menopause, and the function of the ovaries, ovulation, had persisted, in one case for five years.

Comparing these two classes of cases, we find that in the first the ovaries completely atrophied and the other changes of the menopause had taken place within three to four years after operation, while in the second class the ovaries had not atrophied as long as the cases were observed, in one for three and a half years and another for five years, their functions continued, and in none was there the least indication of a beginning menopause.

The preservation of a portion of functionating uterine tissue with the ovaries seems assuredly to be sufficient to continue the functions of ovulation and menstruation until five years at least, and most probably to the natural time of the menopause.

Fourth. Will such ovaries produce painful molimina menstrualia, dysmenorrhea, necessitating a secondary operation?

In the four cases here referred to the molimina menstrualia were normal. In the cases investigated to determine the presence or absence of atrophy of the ovaries by Glänecke, Brennecke, and Abel, and in the clinical observations of the others mentioned, as above referred to, no statement is made of abnormal molimina menstrualia, though they were present, according to Abel, in half of the cases. Painful menstruation would no doubt be induced by the development of the usual causes of ovarian dysmenorrhea, just as in the woman with her uterus and ovaries intact.

Fifth. Is there any technical reason why this operation should not be performed, and will it increase the danger of hysteromyomectomy?

The blood supply to the uterine stump, securing the uterine arteries at the higher point, would ever be sufficient to nourish the tissues, and infection would not be more apt to occur here than in the ordinary hysteromyomectomy. The bacteriology of the cervix and uterus has demonstrated that it is no longer necessary to cauterize or antisepticize the canal of the cervical stump, at least never in the cases where this operation is ap-

plicable. Nor is it of any advantage to excise the endometrium of the cervical stump.

Péan[1] condemned leaving the ovaries in position in the operation of hysterectomy, because in one case, at the time of the next menstrual period, a hematoma developed in the pelvis which caused the death of the patient. This is a single case among a possible many hundred; it will probably never occur again, and cannot indicate that such a complication will form a danger of this operation I have described. The occurrence of pregnancy in the cervical stump, which I believe has been found once or twice after hysteromyomectomy where the ovaries were left, it would seem to me would be impossible if the cut uterine muscle surfaces were accurately and firmly approximated, as they should be, and the peritoneum sutured over the stump, so that the ovum could not reach the cervical cavity or the spermatozoa the abdominal cavity.

The length of operation might be prolonged a few minutes, but not sufficient to increase its danger.

I would say that there is no technical reason why the operation should not be performed, nor is there cause to make it more dangerous than an easy hysteromyomectomy.

Although my experience with this conservative procedure has been limited to one case, no others having come under my care in the intervening months where the operation could be applied, I feel—since it can be associated with no greater danger to life than the usual hysteromyomectomy, there seems to be no cause for complicating sequelæ, and particularly because its object is the preservation of normal tissues, organs, and functions, and through these good health, constituting the highest aim of modern surgery—that it should always be applied in women under 40 years of age having the special class of myomata described.

Dr. J. M. Baldy.—The operation Dr. Beyea speaks of is the usual one done by us all, except the amputation is done a little higher. I think the preservation of the menstruating function is a mere matter of sentimentality which in one or two generations of education could be thoroughly eradicated. We leave educated womankind to believe that the menstruation is essential to her health and happiness. We know this to be nonsense and will have to re-educate woman to know the truth.

In the vast majority of fibroid tumors there is not only fibroid degeneration of the uterus, but of the ovaries, etc., even of the

[1]Centralbl. f. Gynäk., Bd. vii., p. 471.

heart in some few cases. It is a general disease and not local. No one knows the excitation of the disease. I have not much patience with the word "conservatism." I think there is no other one word so generally used to cover ignorance and cowardice. No one man has yet pointed out or explained away or made satisfactory comparative results as to the good obtained in conserving the ovaries and the harm that is developed by leaving them. We have all had the experience of having left a part of the ovary which subsequently had to be removed for ovarian cyst or other trouble. Ovarian cysts have developed from healthy tissue left behind. We have known of many patients who, after removal of one appendage, have returned for the removal of the other and of the uterus. It is nonsense to say that they are not womanly women, that they grow hair on their faces, or are not better off without these organs than with them. To all appearances they are happy, contented women. I believe we often risk the future health of our patients by leaving the organs in very many of these operations. The organs have but one use—propagation. If that is impossible or undesirable, then I believe the future health of our patients is our first consideration, and for my part I have not much faith in the tendency to the universal so-called conservatism of the day.

Dr. John B. Shober.—I have listened with great interest to Dr. Beyea's paper. It seems to me that the majority of cases of fibromyomata are complicated by ovarian and tubal disease. When we find normal ovaries and tubes I am in favor of leaving the normal ovaries. I cannot see any advantage in leaving the tubes in this condition. Where there is a probability of future pregnancy it is different. The tubes, however, are but ducts and have no function. By leaving the ovaries women are spared many of the symptoms of the surgical menopause. I can see no objection to amputating the uterus above the internal os, except that it does result in a future menstrual discharge, which, as Dr. Baldy has suggested, is a function entirely unnecessary in these cases where pregnancy is impossible. After the fundus is removed there is no reason in my mind for leaving behind the oviducts, and no further reason for attempting to preserve the menstrual function. I am in favor of conservatism in leaving ovaries which we feel sure are normal. There are cases on the border line and we do not know sufficiently yet when we have diseased ovaries. If we are in doubt we should remove them, because there have been many cases reported in which cystic disease of the ovary has occurred secondarily from their being left.

Dr. Beyea (closing).—I cannot agree with Dr. Baldy that the preservation of ovulation and menstruation in an operation when conception is impossible is simply a matter of sentiment. I believe the preservation of these functions and the prevention of the artificial menopause are of the greatest value to young women. It is impossible to preserve ovulation and prevent the

menopause for any length of time without also having menstruation continue. That this is true is proved by the investigations of Abel in fifteen cases where the ovaries were left in position and the uterus amputated at or below the internal os. In all of these cases the menopause followed and the ovaries had atrophied and practically disappeared within three or four years after operation.

The question whether pathological changes are present in the ovaries when the uterus contains a myoma is one that has caused some study and discussion. Some believe that the pathological changes are of inflammatory nature; others that it is not an actual pathological change, but a simple hyperplasia of the ovaries. Clinically, every one of experience knows these ovaries are very frequently normal. They are only diseased when the seat of a new growth or when there is an associated inflammation of the tubes. They have frequently been left behind in hysteromyomectomy, and one cannot find mention made of their causing other than normal symptoms. A search through the literature shows but two cases where it was necessary to perform a secondary operation for disease of these ovaries. I would say that Dr. Baldy's theory, that pathological changes develop frequently in these ovaries, is not a warrantable one.

As Dr. Shober said, it is unnecessary to leave the tubes. They are left simply because I believe it would be a waste of time to remove them, since they can do no harm. I cannot appreciate, after studying this subject of conservatism as here practised and the various phases of possible complications which might follow, how this operation can result in any harm. Possibly painful menstruation might follow in rare instances, yet there is little evidence to show that it would. I know of one case operated upon by Dr. Hirst where, for seven or eight years after hysterectomy in which the ovaries were left, the woman had a great amount of pain at the time of each menstrual period. It was necessary to remove the ovaries in this case.

Dr. Shober.—May I ask Dr. Beyea if the object of this more extensive myomectomy is not simply to preserve the menstrual function in a limited condition for a few more years? It has seemed to me that the only object in leaving the ovaries behind is to prevent the woman from suffering the symptoms of the surgical menopause, which object is accomplished after two or three years.

Dr. Beyea.—Answering Dr. Shober's question, I would say that the object of the operation is to preserve ovaries, corporeal endometrium, and muscle tissue of the uterine body, so that the functions of these tissues may continue to the time of the natural menopause.

Dr. J. M. Baldy.—I would like to ask Dr. Beyea if he means there have been only two cases in which the ovaries were left showing recurrence of disease.

Dr. Beyea.—Yes; I was able to find but the two cases reported

where ovaries left in position underwent pathological change which necessitated a secondary operation.

DR. BALDY.—To what class of cases does Dr. Beyea refer?

DR. BEYEA.—For a number of years the ovaries have frequently been left in position in performing hysterectomy for carcinomata and myomata of the uterus. In a review of the literature of these cases for the report of secondary operations for disease of these ovaries I have been able to discover but two cases—one by Dr. Baldy where an ovary was accidentally left in position in a hysteromyomectomy with extraperitoneal treatment of the stump, and the other by Martin where an ovarian cystoma developed from the ovary left in position.

DR. BALDY.—It makes no difference whether the ovary is left in hysterectomy or in any other operation. An ovary is an ovary. The point is that the disease is such as would possibly affect both ovaries, and the portion left may develop into trouble. In cancer diseased ovaries and tubes are rare. We can exclude that class, and that is the only class in which Dr. Beyea states he has had much experience. There are hundreds of cases in which the ovary was retained and there was a return of trouble on that side. Literature is full of such cases. I cannot see, therefore, why Dr. Beyea should assume that the two cases to which he refers are the only ones simply because hysterectomy happened to be done on them; the other class are perfectly germane to the subject and are just as valuable for drawing conclusions as are these two. The only reason it has not occurred oftener after hysterectomy is because few such operations have been done and no sufficient time has elapsed for the trouble to develop and be reported. If Dr. Beyea will have a little patience there will be plenty of them in the literature.

DR. SHOBER.—I would like to ask Dr. Beyea if he has in mind conservative operations done upon diseased tubes and ovaries, and if there has been in only two cases a return of the trouble.

DR. BEYEA.—I am speaking only of cases in which I consider the ovaries to be normal.

DR. BALDY.—It makes no difference what the disease is. The ovary may be considered normal and left, but it may subsequently become diseased. It will happen after hysterectomy as well as after unilateral ovariotomy or when a small piece of ovary is left.

DR. BEYEA.—I am sure that in a very painstaking search through the literature one is unable to find more than the two cases I have referred to. This is the only evidence one can gain on the subject. I cannot, therefore, agree with Dr. Baldy that pathological changes are frequent and secondary operation would often be necessary.

Stated Meeting, October 17, 1901.

JOHN C. DA COSTA, M.D., *in the Chair.*

A paper was read by invitation by DR. OSCAR H. ALLIS

ON INTESTINAL ANASTOMOSIS, WITH ILLUSTRATION OF METHODS AND INSTRUMENTS,

MY first intestinal anastomosis was performed by means of the Murphy button. It was accomplished with so much ease that I could not restrain my feelings of complaisance that I had accomplished a great feat. Whatever be the fate of that ingenious contrivance, the world owes Dr. Murphy a grateful remembrance for the impetus he gave to a most interesting and important surgical procedure.

My case was a gastro-enterostomy (Case 1), the button passed into the stomach, where it was found at the autopsy a year and a half after the operation.

In my second case I was unexpectedly obliged to make an end-to-end anastomosis (Case 2). I again resorted to the button, but the abnormal thickness of the intestinal walls, due to pathological conditions (see Case 2), rendered its application difficult. The immediate result was satisfactory. The movements of the bowels were for a time natural, but later on were effected at the site of the operation, and still later I cut down and removed the button, which had not moved.

Upon a subsequent trial I found the intestines greatly improved and well adapted to the "button," but this time, unfortunately, the instrument was out of order and could not be used. There was nothing left for me to do but make an approximation with such general instruments as were at hand, but chiefly was indebted to needle, suture, and my fingers.

My operation was performed in the following manner: If the reader will divest himself of his coat and place the cuffs parallel, he can look down into the sleeve ends as into a double-barrelled gun. The inner surfaces of the sleeves correspond to the mucous surfaces, and the outer surfaces to the serous sur-

faces of the gut ends. Now, if the reader will sew the two proximal edges of the coat sleeves together, by a suture that passes entirely through them, he will find that he can readily sew fully half their circumference together. If now he will *turn in* the remaining borders, he will find that he can readily complete the circuit by sewing the outer surfaces. It was precisely in this way that I finally successfully approximated the intestines in Case 2.

The fact that the mucous membrane could be safely included in a suture emboldened me to repeat the operation; and finding by experience that my fingers could not always accomplish my purpose, I have added to my case two instruments that I have found very convenient not only as special aids in anastomoses, but also in general surgical work.

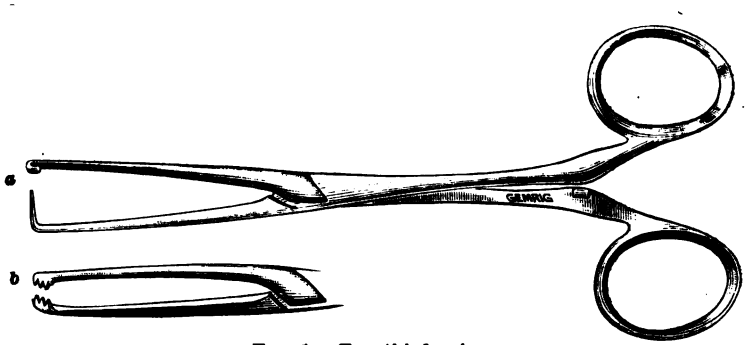


FIG. 1.—Two-thirds size.

The first may be called tenaculum forceps (Fig. 1, *a*). I use them very much as women use pins and basting thread to secure their work temporarily while they are sewing it more securely. It does not matter what stitch is used —the whip stitch, through-and-through stitch, or over-and-over. All that is essential is that the approximated bowels should be securely united. Having firmly approximated one half the circumference, I remove the forceps, and, turning the partly united structures half round, I seize the seam with my tenaculum forceps, and with a pair basting the work a little further on (Fig. 3), the through-and-through suturing can be continued almost entirely around the entire circumference. When near the end of the approximation I have found toothed forceps (Fig. 1, *b*), with serrations on the edge, convenient for turning in the mucous

edges, adjusting the serous, and holding them approximated until sutured (Fig. 4). In the sewing of the serous surfaces any suture that one finds convenient will answer the purpose. The rule that the serous coat must only be pierced is no longer entertained; and the operator will act wisely if he penetrates the thickness of the intestinal wall. Whatever suture he employs, if he takes them fairly near together he will find that they will be buried as he tightens them. In this way every possible intestinal anastomosis can be accomplished—viz., end-to-end, lateral, and insertion.

I have said nothing of the technique of the operation. This

FIG. 2.

part has been so constantly before the profession that all are familiar with it.

A further remark about the instruments. I do not care to recommend these instruments simply as aids in intestinal work. The *tenaculum* forceps are valuable in protecting the field of operation. In work upon the neck, or near any part where the hair cannot be removed, after the incision through the skin has been made these instruments can be made to catch the edge of aseptic towels to the edge of the wound and hold them secure until the operation is completed; while the forceps with lateral serrations are often most convenient as hemostats, or as searchers for tendons which are retracted in wounds of the hands and feet.

I have not made upon the living subject an anastomosis between the stomach and bowel, using the instruments I have described. However, I think it can be easily done, and the accompanying drawings illustrate the manner in which I should do it.

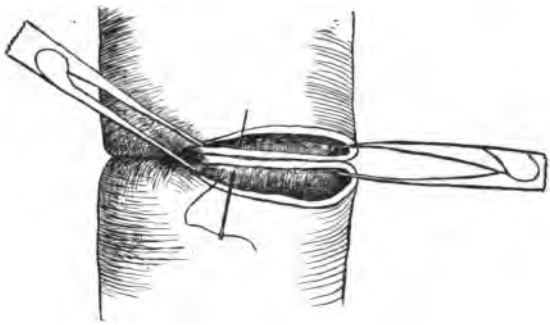


FIG. 3.

CASES.

CASE I.—Thomas J., aged 46, admitted to the Presbyterian Hospital February 22, 1894. He was suffering from carcinoma of the pyloric orifice of the stomach. In order to relieve the

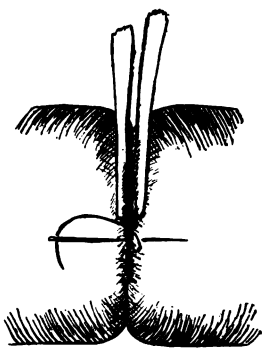


FIG. 4.

obstruction a gastro-enterostomy was performed; the bowel was united to the stomach by means of the Murphy button.

He was discharged from the hospital on April 9, 1894. In August, 1895, he was readmitted suffering from intestinal obstruction. A second operation was performed, but the cancerous mass was now so extensive that it was impossible to remove

it, so the stomach was stitched to the abdominal wall and wound drained. He died some hours later. At the autopsy the Murphy button was found in the stomach.

CASE II.—Ellen C., aged 23, admitted to Presbyterian Hos-

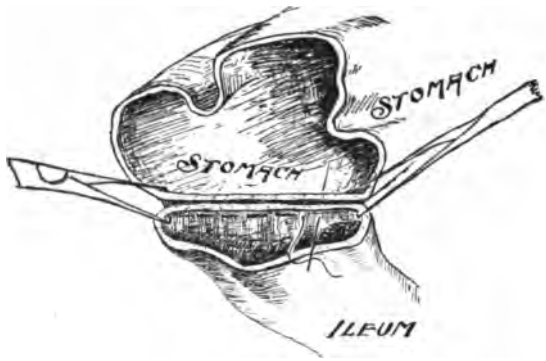


FIG. 5.

pital June 13, 1898. She gave the following history: Operated on for appendical abscess at the German Hospital in August, 1896. The operation was followed by a fecal fistula which discharged until November, 1897, when she was again operated upon at the German Hospital. The wound healed after this

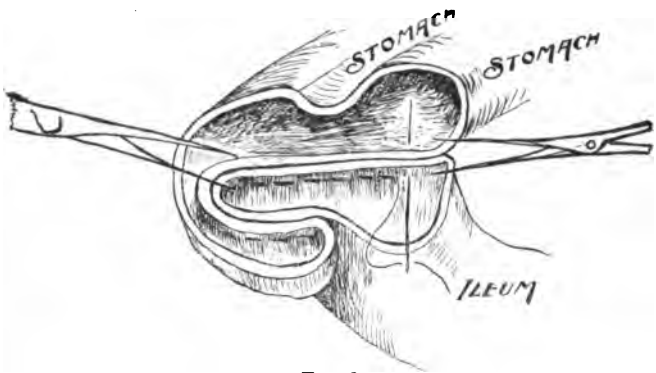


FIG. 6.

operation, but about one month later began to discharge again and has continued to do so ever since.

On June 16, 1898, she was etherized and Dr. Allis performed the following operation: An incision five inches long made along the line of the old scar, the fistulous track dissected out,

peritoneal cavity opened, adhesions broken up, the perforated intestine resected, and an end-to-end anastomosis made with the Murphy button. The peritoneum along the line of the fistulous track was covered with many small, raised, round nodules which looked not unlike large miliary tubercles. One of these, containing a yellow, cheesy matter, was cut out and submitted to microscopical examination, but the pathologist pronounced it non-tubercular. The abdominal wound was closed without drainage. Everything progressed favorably until July 1, when she began to have pain in the wound. A skiagraph showed the Murphy button to be in its original position. On July 5 the stitches in the abdominal wall were all removed and it was found that there

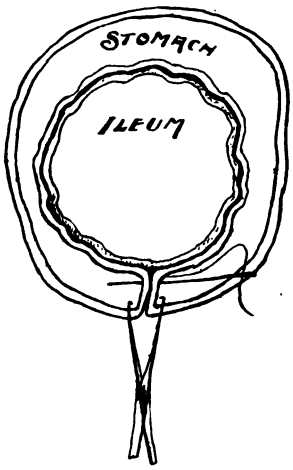


FIG. 7.

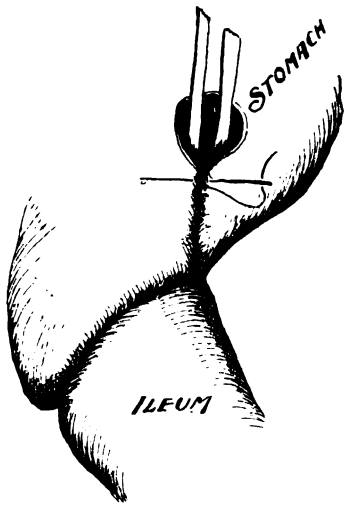


FIG. 8.

was a sinus at the upper angle of the wound. Another skiagraph showed the button had not changed its position, so it was decided to cut down and remove it, which was done July 28. The wound was now packed with gauze and allowed to heal by granulation. A fecal fistula soon developed near the centre of the wound, which positively refused to heal, notwithstanding it was curetted out and thoroughly opened several times. On October 25, 1899, she was again etherized, a long incision made, peritoneal cavity opened, the numerous adhesions matting the intestines together broken up, about ten or twelve inches of diseased intestine resected, and an end-to-end anastomosis made in the manner described above by Dr. Allis, except that in this case

common hemostatic forceps were used instead of the tenaculum forceps, which had not been invented at that time. She made an uneventful recovery and was discharged from the hospital December 15, completely cured. She has been recently heard from and still enjoys the best of health, having absolutely no trouble of any kind.

CASE III.—Mrs. K., aged 46, admitted to Presbyterian Hospital July 19, 1901, suffering from a strangulated inguinal hernia on right side. She was immediately etherized, an incision made over the mass, the hernial sac opened up, the gut found to be gangrenous; the abdominal incision was then lengthened upward, all of the gangrenous gut resected, an end-to-end anastomosis made in the manner described above. In this case the special forceps devised by Dr. Allis were used and greatly facilitated the operation, at the same time enabling the two ends to be more firmly and accurately united. The abdominal wound was left open, packed with gauze, and allowed to granulate. The woman was discharged from the hospital August 30, cured. There was not an unfavorable symptom following the operation, and, so far as we could tell, the bowel was completely restored to its normal condition.

DR. MCREYNOLDS.—Dr. Allis has given to the medical profession something that will be of the greatest value. I had the opportunity to see both operations. The first could not have been on a worse subject. These tenacula make it possible to do the end-to-end anastomosis quickly, accurately, and firmly. Heretofore the nearest approach to a perfect instrument was that invented by Dr. O'Hara, but his forceps are liable to get out of order. Within the last few weeks I tried to use his forceps, but found they had been spoiled by boiling, and was forced to use the Murphy button. Had I had these little forceps of Dr. Allis I could have done an end-to-end anastomosis more quickly and I could have been more sure of the result, although in this case the Murphy button passed without trouble.

When I first saw these tenacula which Dr. Allis has shown, I thought the same principle might be used for other forceps. It always has been difficult to get forceps for use in gynecological work that will hold without being pulled off. I have therefore had tenacula made on this same principle. I have them with me and would like to submit them to the members for examination. I think the forceps answer every purpose in gynecology. They take the place of the double tenaculum and will not injure the tissues as much as that instrument or the shepherd's crook. As the instrument-maker said to me, Dr. Allis has invented an instrument which will revolutionize tenacula.

Dr. R. C. Norris.—The plan of Dr. Allis seems to me a very attractive one. The only queries in the way of criticism occurring to me are: Is it desirable to use the continuous stitch and to puncture all the walls of the gut? Is there any danger to be feared from each stitch puncturing the mucous coat of the bowel? What is the danger of puncture or laceration of the bowel with these tenacula? Whether a continuous suture, in making anastomoses, secures firmer and more accurate apposition than the interrupted suture is, I think, an important question in technique. Is the continuous suture not likely to be sewn too tightly and more liable to produce strangulation than the mattress suture? These are details in technique which are sufficiently important to discuss. The principle involved in Dr. Allis' method is certainly interesting, and appeals to me as a very rapid method, useful in an emergency.

Dr. H. D. Beyea.—I would like to say in defence of the O'Hara forceps that I have kept them for two years and have never yet found them out of order. Some of the first were not of as good quality as the more recent ones, and it may have been with one of these that Dr. McReynolds had his unsatisfactory experience. Also, it must be remembered that they are delicate instruments, not to be handled carelessly or twisted out of shape.

I think Dr. Allis' plan is an excellent one, and especially the "basting" principle. I would, however, prefer the O'Hara forceps for the advantage that, when applied, no fecal contents are allowed to escape from the intestines into the field of operation.

As to Dr. Norris' objection, I think the crushing of the intestines along the course of the forceps is just at the very edge, includes only about a sixteenth of an inch, and as this is inverted into the intestine I cannot see how it can do any harm. In the very few cases I have seen the suturing has been done without this basting or instrument of any sort. In one of them the continuous silk suture was introduced through the coats of the bowel and it did not cause trouble. From my slight experience I would say that the through-and-through suture would not do harm.

Dr. John C. Da Costa.—Some months ago Dr. Allis showed me these forceps. I was so struck with their adaptability, not only to intestinal anastomoses but to general work, that I had sets of them made, with the result that I was able to discard several special instruments. I have used them principally in gynecological work. We all know how easily in doing a celiotomy the peritoneum is torn from the wall of the abdomen. Since using these instruments it has been my routine practice to grip the peritoneum and muscle together, and I have no trouble from their separation, and no damage is done to the tissues. This, as well as his hemostatic forceps, is a great advance on the ordinary hemostatic forceps. We know the lia-

bility to cut the blood vessels in opening the abdomen, and that the tissues are often devitalized and put in a condition to break down when caught by the ordinary tissue forceps; these tenacula and Dr. Allis' hemostatic forceps do not produce that condition. These hemostatic forceps served me in good stead in a recent hysterectomy. After I had removed the uterus I found an artery spurting, which I made four or five attempts to catch with the ordinary hemostatic forceps, but failed. With the Allis forceps I accomplished it with the first attempt.

With regard to the through-and-through sutures of the intestine, it will be noticed that the puncture made by Dr. Allis with the tenaculum forceps was on the inside of the bowel and inside of his stitches. With regard to puncturing the bowels, I have not had to do an intestinal anastomosis since having these forceps, but have had to sew up several holes in the bowels, and I must say it would puzzle a better man than I am to always hit the middle of the mucous layer of the intestine.

Dr. Allis (closing).—The President has answered Dr. Norris' questions quite as well as I could. I would not close the intestinal wound after an operation if I thought I had impregnated the surrounding parts with any of the gut contents. The steps of preparing the field of operation, packing gauze about the intestines, etc., have not been included in the paper, but Dr. F. G. Connell, writing from Chicago, says he has performed the operation in eighteen cases in which he has used a similar method of suturing the bowel. There is a small amount of exposure to infection in the method that I have given, which I believe is trifling, but at the same time there are occasions when these instruments will serve a purpose when possibly others might not be so efficient. In seizing the bowel ends and sewing adjacent parts together by a through-and-through suture, the instruments and thread may become soiled, but approximated parts do not. My experience has taught me that there is little to fear from the through-and-through suture, and I should attribute any mishap more to the want of firm closure of the wound than to infection produced by handling or by instruments. I repeat that I am exceedingly obliged for the courteous manner in which my remarks have been received.

Dr. H. D. Beyea read a

REPORT OF A CASE OF EXTRAUTERINE PREGNANCY, ENCAPSULATION OF THE FETAL BONES FOR THREE AND A HALF YEARS, WITH ATTEMPTED EXTRUSION OF THE SAME INTO THE RECTUM.

The continuation of extrauterine pregnancy to an advanced stage, with death of the fetus, maceration and encapsulation of the fetal bones in the abdominal cavity for a period of years, is now very rarely observed. The acuteness of the modern surgeon determines a diagnosis of this condition early and he at once resorts to operation. I have thought, therefore, that the following case would be of interest to the members of the Section.

Mrs. N. E. Y., 37 years of age, housewife, was admitted to the Gynecean Hospital on October 10. She is the mother of one child, now 15 years of age, and has had one miscarriage. The menstrual function was established at 12 years of age and appeared regularly and normally, lasting five days. For twelve years the patient has complained of some pain in the lower abdomen, particularly the left side, but not of sufficient severity to distinctly interfere with her health. About three and a half years ago, after the menstrual function had been absent for three months, she discovered what she describes as a tender lump in the left lower abdomen. The lump gradually increased in size, and at the time of each menstrual period she would be taken with severe pain in the abdomen, mostly over the lump, lasting generally three days. The menstrual function remained absent and the tumor steadily increased in size for the succeeding seven months, until the abdomen, she believes, was the size of that at full-term pregnancy. At the tenth month the menstrual function returned and with very severe pain. The abdomen remained about the same size for a year and then gradually grew smaller until no lump could be felt by the patient. Her health then improved and she resumed her duties. In the fall of 1900 she entered one of the hospitals of this city, where a diagnosis of myoma of the uterus was made and operation advised. She became frightened and left the hospital. In December, 1900, more than three years after the onset of the trouble, an attack of pain was followed by the discharge of blood and pus from the bowel. Then she began to have diarrhea, which persisted with considerable pain up to the time she entered the hospital. She has been more or less confined to bed ever since this accident in December.

Upon making a vaginal examination I found the uterus movable, but displaced bodily forward by a hard, irregular mass extending from the pelvic wall on the right nearly across the pelvis and filling Douglas' cul-de-sac. It was evident that it was not a tumorous formation of the ovary or uterus or any form of tubal disease. On making a rectal examination an opening the size of a quarter of a dollar could be felt in the anterior wall of the bowel, through which were protruding masses of bony tissue. The diagnosis of old extrauterine pregnancy was thus easily made.

Last Friday celiotomy was performed. Both tubes and ovaries were found diseased and densely adherent to the underlying mass. The mass, which occupied a position in front of the rectum and extending to the pelvic wall on the right, was opened, and one after another the bones of the fetal skeleton were removed. The adhesions to the tubes and ovaries were separated and both adnexa removed. The opening in the bowel was at the greatest depth of the cul-de-sac, and I therefore found it impossible to close it by direct suture. The overlying tissue, however, was sutured over it, so as to shut off this opening

from the peritoneal cavity. A gauze Mikulicz drain was then introduced over the position of the sutures which closed the opening in the bowel. The abdomen was closed with mass suture. The patient has thus far made a normal convalescence, except that after the removal of the drain on the fourth day there was a small amount of fecal discharge through the drainage tract. This, however, is nothing more than one could expect. The temperature and pulse to-day are about normal.

Dr. R. C. Norris.—This is an exceedingly interesting case. It is very rare at this day for an operator to meet with a case of extrauterine pregnancy neglected surgically for so long a period. I would like to ask Dr. Beyea if there was anything in the woman's history to indicate the date of rupture of the tube. The abdominal operation showed the advantage of dealing with a case of this kind through an abdominal incision. The finding of a cavity communicating with the rectum would suggest to some surgeons the advisability of vaginal puncture, to see what could be done without opening the peritoneal cavity, but the conditions found show the very great advantage of the abdominal route. The most advanced case of extrauterine pregnancy I have ever seen was of eighteen weeks' duration. The bones of the fetus corresponded to that period of development. The patient was seen shortly after the death of the fetus. The temperature was high. The infection of the sac had not lasted for a sufficient length of time to induce suppuration and attempts on Nature's part to effect discharge by ulceration into the bowel or bladder.

Dr. Beyea.—In answer to Dr. Norris' question regarding indication of rupture of the tube, both tubes were closed; were those of a salpingitis. There was no indication of the position of the rupture; the appearance was that of there having been a secondary ovarian pregnancy, but in all probability it was a case of primary tubal pregnancy.

REPORTS OF CASES.

Dr. R. C. Norris.—I would like to report an interesting case which I have had under observation at the Preston Retreat. The case, a primigravida, was the first one of violent infection that has occurred at the Retreat since I have been in charge—a period of seven years. The patient came to us in active labor during the summer while I was away, and was seen by my assistant. There was a flat pelvis, conjugate diameter nine centimetres, with a history of two dead babies. Delivery was accomplished with forceps. The child was not abnormally large. There was the history that she had been in labor for forty-eight hours. There had been no strong, active bearing-down pains. The cervix was well dilated and she was delivered of a dead baby. There was no certainty that the child was living when the forceps was applied. On the third day she developed fever. A culture made from the vaginal and uterine secretions showed

streptococcus infection. The temperature on the third day was between 103° and 104°. She developed in the course of three days intense pain in the legs, soon followed by double phlegmasia, high temperature, and feeble pulse. In the attempt to secure evacuation of the bowels it was necessary to administer an enema in conjunction with purgative medicines. The nurse called my attention to the fact that there seemed to be a discharge from the vagina which was fecal in character. A thorough examination of the entire vaginal canal failed to find any opening. Being a case of streptococcus infection, and without any odor, the uterine cavity was not curetted, but on this day I determined to employ an intrauterine douche. Before inserting the douche nozzle I passed my finger through the cervix, and within an inch and a half of the external os I found a fistula between the bowel and uterus, with fecal discharge through the lower segment of the uterus into the vagina. The woman had peritoneal symptoms with a pulse of 140, which made the advisability of a prompt operation questionable. We therefore held operation in reserve, but the case went on to complete recovery. The fistula closed and she will leave the institution on Saturday of this week. I examined her this morning and found complete closure of the opening. There is some inflammatory exudate back of the lower uterine segment, and there is no doubt but that the bowel is attached to it.

She was fortunate to get well, and the case illustrates what careful and systematic stimulation, together with the usual treatment for infection by means of cleanliness, food, salt solution, and nuclein, will accomplish in spite of serious injury. In trying to find an explanation for the injury I have decided that there can be but one—that the head rested upon the undilated lower segment of the uterus, pressed against the sacral promontory, and gave rise to pressure necrosis. There must have been a portion of the intestine caught between the head and the sacral promontory that sloughed and caused the fistulous opening in the bowel. I would like to ask if any of the members have read of a similar case.

Dr. McReynolds.—I had a case of vesico-uterine fistula some time ago. The child was delivered with forceps after the woman had been in labor for only a few hours. After the birth of the child there was high temperature, and the attending physician thought she had typhoid fever and sent her into the hospital. I was asked to see her. I made a diagnosis of sepsis, and, through the kindness of Dr. Duer, the case came under my care. It was soon apparent that the woman was profoundly septic, and I thought in addition there was an ordinary vesico-vaginal fistula. On account of the great tenderness of the parts I was unable to make at first a thorough examination. After recovering from the acute symptoms the condition was discovered to be a vesico-uterine fistula. I was much perplexed as to the best thing to do, and wondered whether it was possible to cure such

a fistula. I put her upon treatment, and to get the bladder in good condition washed it out with boracic acid solution. Much to my surprise the opening closed and she made a good recovery. The perineum was badly torn, but she is to return for second operation. When she left the hospital she had perfect control of the urine.

Meeting of November 21, 1901.

JOHN C. DA COSTA, M.D., *in the Chair.*

DR. CHARLES P. NOBLE read a paper on

THE HALF-HITCH SUTURE—A NEW SUTURE FOR USE IN ANTERIOR COLPORRHAPHY.

THE method of suturing which I bring to your attention I have used since 1894 in anterior colporrhaphy and resection of the anterior vaginal wall. Prior to that time the Stoltz operation had been employed as one of the steps in the operative treatment of procidentia uteri. Realizing that the principle of the Stoltz operation is wrong for cases of procidentia, because it draws the cervix uteri toward the pubic arch, this operation was abandoned, and first anterior colporrhaphy and later resection of the entire thickness of the anterior vaginal wall was adopted. The form of denudation in the one case, or of the portion of the vaginal wall to be removed in the other case, depends upon the degree of cystocele or relaxation of the anterior vaginal wall in the particular patient. Its dimensions, however, are always much greater from before backward than from side to side. In closing the wound it is essential that the lateral margins be approximated in such a way that the wound will not be foreshortened—that is, that the cervix shall not be dragged forward. There can be no doubt that the interrupted suture fully meets the requirements of the situation. The disadvantage of the interrupted suture is the length of time required to place the necessary number of sutures. The continuous suture can be placed very much more rapidly, but has the disadvantage of foreshortening the wound.

To meet the requirements of the situation I devised what I call the "half-hitch suture." This is introduced in the same manner as the continuous suture, except that the needle and free end of the suture is drawn under the last preceding loop each time after passing through the tissues. When the suture is drawn taut the result is that the lateral borders of the wound are approximated without foreshortening. This method of suturing is employed particularly for the approximation of the deeper layers

of the wound, the needle catching up the under surface of the cut vaginal wall and any loose tissue in contact with the wall of the bladder. By this means the depths of the wound are closed and a dead space is prevented. The superficial row by means of which the vaginal walls themselves are approximated is introduced after the usual manner of placing the continuous suture.

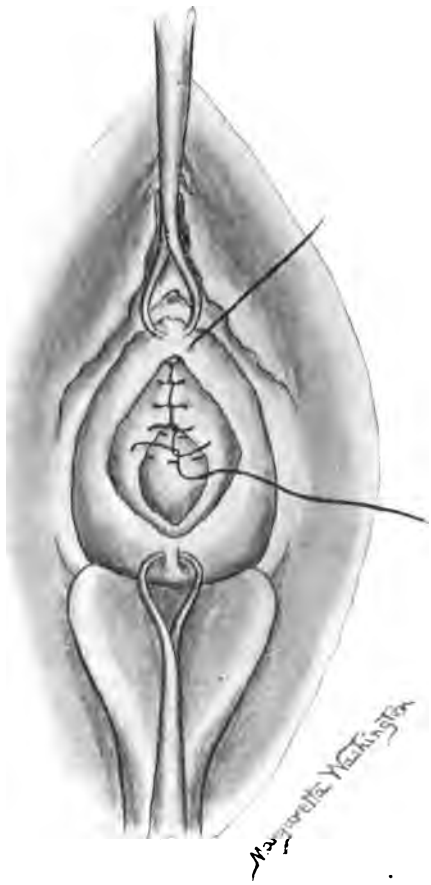


FIG. 1.—The half-hitch suture closing the deeper layers of the wound.

Cumol catgut is the material employed. In addition to this double row of catgut sutures, usually two mattress sutures of silkworm gut are placed to take tension off of the line of union. This is important because of the strain which might come upon the line of union from efforts at vomiting or in defecation some days after the operation, when the catgut has become softened.

Resection of the vaginal wall is one of the important steps in the operative treatment of procidentia uteri and serves to remove the excess of the overstretched tissues of the pubic segment of the pelvic floor. When resection of the entire vaginal wall is practised the scar is much more firm than that obtained when merely a thin strip of the mucous membrane is removed and the

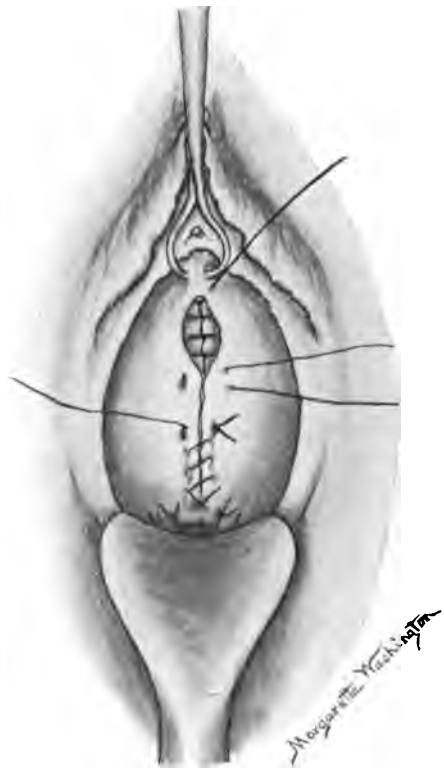


FIG. 2.—Closing the vaginal wound with a continuous suture and with mattress sutures.

vaginal wall is folded upon itself, as was done in the various older methods of performing anterior colporrhaphy.

I think it important to call attention to the fact that the denudation should not be too broad. If too much tissue is removed laterally, it has two bad consequences: the resulting anterior vaginal wall will be lowered perhaps a half-inch below its proper plane, and the lateral vaginal walls will be dragged

so far forward and so put upon the stretch that it will interfere with the perineal repair so important in procidentia cases.

Dr. J. M. Baldy.—The points made by Dr. Noble are of course of importance in plastic surgery. I do not, however, think that the continuous suture, used in the proper way, will foreshorten the vagina, except to an inappreciable extent. I can see how the half-hitch suture which Dr. Noble uses would do very much the same thing if pulled tight. The amount in either case would be so inappreciable that there would be no effect on the result. I see that Dr. Noble uses only in the depth of the wound the half-hitch suture, and the continuous suture on the mucous membrane edges. If the one would foreshorten, the other would do the same thing. I would hesitate to do half of the operation with one stitch and the other half with another, if I believed either foreshortened to any material extent. If the foreshortening occurred in the mucous membrane rather than in the depths of the wound, much more tension on the uterus would be the result.

It does not seem to me that there is danger of over-denudation. There are certain landmarks to prevent this accident. If the labia are separated and the anterior wall of the vagina drawn down, the portion exposed will be the extent to denude. The result of suturing after a too wide denudation would be the tearing out of the sutures and that would be the test of whether one was in the habit of denuding too widely or not. I cannot recall more than one or two cases in all my experience in which the line of incision has separated, and I always use catgut in the whole extent of the wound. If the suture is long enough after closing the depths of the wound I often continue the stitching back again with the same suture on the mucous membrane edges.

Dr. R. C. Norris.—There may be an advantage such as Dr. Noble claims in the suture mentioned. It seems to me, however, that a continuous catgut suture in two or three superimposed layers should not foreshorten the oval denudation made on the anterior vaginal wall—the method I have employed with satisfaction. If it should, the shortening would be so trifling as not to interfere with the result of the operation.

One criticism which occurs to me is that, in making this half-hitch suture, tension at an angle is made at the points where the hitch is made and the suture thus might cut through at such points. One would have to use heavier catgut than is used in the simple continuous suture.

Men who have had experience avoid too extensive lateral denudation and see that there is not too great tension. The advantage, to my mind, of the continuous suture in layers, running from the meatus to the cervix and back again, is that a dense cicatrix results which supports the bladder and does not drag the cervix forward. A uterus will not prolapse so long as the cervix is pointing toward the sacrum.

The advantages of Dr. Noble's suture seem to me more theoretical than practical.

DR. GEORGE E. SHOEMAKER.—Sometimes when there is bulging of the anterior vaginal wall there is an elongation and it is desirable by some method of suturing to shorten antero-posteriorly. My own method is, after incising the vaginal wall, to sew it up with layers of cumol gut, in order to be sure that the wound holds in firm union. I do not trust catgut on mucous membrane, except the chromicized catgut. The silk should not be removed until the end of convalescence, so it can be done without the parts being stretched.

DR. JOHN C. DA COSTA.—I have not tried Dr. Noble's half-hitch stitch on the mucous membrane of the vagina. I have, however, in other parts of the body, and it does not seem to give me the same satisfaction—does not hold the parts as well as either the interrupted suture or running stitch. I used the method more than two years ago at the suggestion of Dr. Rhoads, formerly a resident at the Jefferson Hospital. I found there was a tendency, unless there was very careful approximation, for the stitches to hold on one side closer than the other and produce a little of that foreshortening that Dr. Noble is trying to prevent.

In anterior colporrhaphy my method differs from that of the gentlemen who have spoken. I have not found as good results in the buried sutures as in a single row. I place the sutures one-quarter inch from the edge of the mucous membrane, pick up the raw surfaces across the whole extent of the wound, and bring the suture out about a quarter of an inch from the edge of the other side. That brings the whole mass together in the centre line and holds firmly. By doing this either with the running stitch, which is quicker, or by the interrupted, I think the results will always be satisfactory.

DR. C. P. NOBLE (closing).—It is evident that all of us recognize the principle in procidentia proper that the anterior vaginal wall should not be foreshortened. I recognize that there are cases of large cystocele with little procidentia. These take place so commonly in old women that they are referred to as "old women's cystoceles." There, undoubtedly, the indication is to foreshorten the anterior vaginal wall, because the cervix remains in much its normal position and the anterior vaginal wall is perhaps a third longer than it should be. I am, however, glad to see that in the class of cases mentioned, procidentia, we are all agreed that this foreshortening should not be permitted. I have used this method of suturing since 1894 and in that time have done more than one hundred procidentia operations, and from my experience I am satisfied that there is less tendency to foreshortening than with the running stitch. The reason is that in the deeper layers the sutures are in very movable tissue. In the procidentia cases the cervix is already down and there is no resistance from behind, or very little, because of the procidentia.

In other words, there is nothing to prevent the cervix from being drawn forward by the suture. If there is nothing to break the tension, while the greater tendency is to approximate the wound laterally, there is also a tendency to approximate it from end to end. I agree that with a good operator the vaginal wall will be sufficiently long to give a good result, but I am equally certain it will be rather longer if he uses the half-hitch rather than the running stitch. The tissues in the deeper layers are very movable. The vaginal wall is not so movable and the tendency to foreshorten is there much less than in the deeper layers. In this layer, as the drawing shows, I always use in extensive cases two mattress sutures of silkworm gut, which also tends to prevent foreshortening. These have about the same action as the half-hitch sutures. In the superficial line I use the running suture.

I would like to emphasize what I said about the effect of extensive denudation. There is great danger in the perineal operation of having too little vaginal wall and having it on the stretch. This, I think, is an important point in doing the operation.

Dr. J. M. Baldy presented

A FEW UNUSUAL CONDITIONS IN GYNECOLOGICAL PRACTICE.

The occasional difficulty of diagnosis between ectopic gestation and pelvic inflammation is well known to all gynecologists; and could one always with certainty make this distinction the following life would have no doubt been saved. As it was, I lost her from my inability to arrive at the correct conclusion, and acted on the impulse of giving her the benefit of the doubt and saving her from what looked to me like a fairly sure death.

I saw the patient at her home in the country and found her as blanched as a woman could well become. Her mucous membranes were absolutely bloodless, she had all the appearance of a woman who had lost a great amount of blood, and was correspondingly weak. She gave the following history: Up to ten days or a week before she had been a perfectly well woman, strong, neither an ache nor a pain, able to attend to her housework, all of which she did herself. She had a good healthy appetite. Her menstrual periods had been regular until the last one, which was a bit scanty; she had no vaginal discharge, nor had she had one in the past as far as she could recollect. She was taken suddenly with a bad "bellyache" low down in the abdomen and had what she and her doctor called a bad sinking spell, since which time she had been confined, off and on, to bed. She was having a continual vaginal discharge of blood. Her pulse was weak and rapid, probably 110 beats to

the minute. A pelvic examination revealed, high up, a mass on the one side and an indefinite feeling of fulness on the opposite side; the fundus uteri was fixed and lost in the mass. It looked like a certain case of extrauterine pregnancy and I did not hesitate to so pronounce it, at the same time pointing out to her doctor that there was ordinarily a bulging of the cul-de-sac and more of a tumor low down, and that the pain from which she suffered at the time of the collapse was not as severe nor as characteristic as was generally observed. Still, in spite of these points, everything else seemed to cry ectopic gestation so loudly that I gave it as a firm opinion that the balance was so decidedly against pus that we could only act on the hypothesis of ectopic and operate at once. Looking back over the case now, I cannot see how I could possibly have done differently. She was removed to the Gynecean Hospital and I operated by the abdominal route the next morning. I found not one particle of blood in the abdominal cavity, but a pair of as beautiful pus tubes as I have seen for many a day. An amputation hysterectomy was done as quickly as circumstances would allow and the patient put to bed. Her pulse was 130 beats to the minute and she never rallied from the effects of the shock, dying inside of ten hours.

I have thought this case over carefully and am afraid if I had to do it over again I would do the same as I did. I say afraid, because if I had known the true situation the patient could have been treated in bed for a week or two until she had recovered from the enormous loss of blood, and could then have had her operation with comparative safety.

Her doctor and I must have been greatly deceived as to the quantity of blood the patient had lost per vaginam; and I am the more convinced that this was very great in quantity for the reason that my nurses at the hospital told me afterward that in cleansing the vagina they had removed large quantities of huge clots and that she had bled freely the night she passed in the hospital. I am completely unable to account for the sudden hemorrhagic condition of the endometrium. I had never seen such a condition before and was unprepared to recognize its significance. The past perfect condition of health of the patient is a mystery, because, although her doctor tells me he has reason to suspect her husband is "a bit gay," the pelvic inflammation was evidently an old one and in no sense an acute condition. Everything about it contradicted such a supposition. A curettage of

the uterus, packing the cavity with sterile gauze, ergot and similar drugs, rest in bed, proper blood-making diet and tonic drugs for a week or two, would have saved her life, I am confident; and yet, in face of the clinical condition, who could have so decided?

APPENDICITIS IN PROCESS OF NATURAL CURE.

Mrs. B. was operated upon by me for a beginning prolapsus uteri last spring. At that time she was in good health, neurotic, but not otherwise affected apparently—at least as far as she or her husband, who is a physician, told me. During her convalescence, while in bed after the end of the second week, she had a sharp attack of pain in her abdomen, which she located on the right side, and which soon made her whole lower abdomen tender. Her tongue was coated and her digestion bad, and I assumed it to be an attack of indigestion with flatulent colic, exaggerated by her general neurosis. The attack cleared up in three or four days and I thought no more of it. She returned to her home up the State at the end of four weeks. The next time I heard from her, a few months later, she had had a couple more attacks similar to the one she had in the Gynecean Hospital. I saw her again about this time. All her old symptoms of prolapse were gone, her general condition was much better, but she had a sore side with tendency to return of sharp attacks of pain. I examined the pelvis and found it healthy; the region of the appendix vermiformis was quite tender and the whole lower abdomen was sore. I suggested appendicitis, but, being within easy reach of her for the summer, encouraged her to wait awhile and see if it would not clear up. The woman was very neurotic, and I thought possibly, as there was no previous history, I might be mistaken and it was all neurosis. A few weeks later I saw her again and at that time gave a positive opinion of chronic appendicitis, but left it for her husband to suggest operation—which he did not do. By carefully questioning the patient I at this time discovered that she had had occasional pains and discomforts in the region of the appendix for a year or more—only slight, but still she distinctly recalled them. A month after returning to town from my vacation she and her husband came to see me again. The attacks had continued, the soreness was constant, and I must say about as severe on pressure over the left side of the spinal column as over the appendix. I now advised

operation, and, seeing that both husband and wife were disinclined to have it, I told him to take his wife to Dr. Deaver and get his opinion without telling that I had given one. They came back with the diagnosis of chronic appendicitis and operation advised. Even now they would not have it, but returned home, and a few weeks later I received a letter that things were getting worse and that they would come down and have an operation. I opened the abdomen over the appendix and found what appeared to be to the eye a perfectly healthy appendix. Everything else in the abdomen and pelvis was healthy. I removed the appendix and now show you a photograph of it after it was cut open.

It will be observed that almost one-half of it is obliterated, beginning from the tip; the balance shows a swollen, hypertrophied lining membrane. The appendix is seven millimetres long; three millimetres are obliterated. In other words, Nature

had started in to cure the disease, and I believe, had it been let alone, would in time have obliterated every trace of mucous membrane throughout its whole length. At no point did the appendix show sign of ulceration or gangrene, and there is no reason why the cure should not have continued safely to the end. However, we cut the process short with the knife and the patient is saved the dangers and discomforts of a prolonged chronic peritonitis.

I present this case simply to call attention to one method adopted by Nature to cure cases of appendicitis, and not as an argument against proper surgical treatment of this class of disease.

SUBURETHRAL ABSCESS.

Mrs. B. was brought to me with the following history: Five years ago she had an operation performed upon her for double ovariotomy, both Fallopian tubes and ovaries being at that time

removed for what she was told were abscesses. The symptoms from which she had suffered being pain and a purulent vaginal discharge, neither the pain nor the discharge was relieved by the operation, and at the end of five weeks the womb was curetted. Ten weeks later, no relief having been experienced, a second curettage was made with a negative result. After an interval of a year partial relief came gradually from both symptoms, only to finally depart and leave her as she had been. Last January a third curettage was performed with no result. She was brought to me in October of this year.

An examination revealed thickened, indurated, and fluctuating broad ligaments, a fixed uterus. There was in addition a bulging, fluctuating tumor projecting into the vagina from the bladder, extending from the urethra back to the cervix, and apparently continuous with the induration in the broad ligaments.

The patient was suffering from bearing-down pains, muco-purulent discharge, and pain on sitting down. The abdomen was opened with the idea of an exploration of the pelvis and its contents and with a probable view to a complete hysterectomy and vaginal drainage of the whole affected area, if found feasible. It was presumed that during one of the curettements the curette had been plunged through the uterine wall (one or both) into the broad ligament, and that thus an infection had been located in the connective tissues about the uterus, all of which probably communicated and had a common opening into the wound which was not sufficient for proper drainage. When the pelvis was opened it was found that the induration was confined to the bases of the broad ligaments and that above the peritoneal attachment there was no opening into the uterus. It was seen that perfect drainage could be gotten from below, and, as it was not desirable (the fundus of the uterus being healthy) to open up any pus cavity into the general abdominal cavity unless necessary, the abdomen was closed. The patient being placed in the ordinary lithotomy position, the cervix was freed from its vaginal attachments anterior and the bladder dissected free with the finger up to the peritoneal attachment, care being taken not to open the peritoneum at any point either anterior or posterior. The finger was worked into all the induration, and, the cervix being split, the anterior lip amputated as high as the peritoneal reflexion. This was done with the object of making the best possible drainage. Pus was found in variable quantities and continued to flow with more or less

freedom for a week without any appreciable effect on the suburethral tumor and without much diminution of symptoms. At the end of this time the bladder was explored with a sound. This was followed by quite free bleeding, and the suspicion was entertained that possibly we had an intravesical tumor to deal with. No blood had been previously passed with the urine, nor had there been any active bladder irritation of any kind. The cystoscope was brought into play; no tumor was to be seen, only a general bulging into the floor of the bladder and a patch of hemorrhagic mucous membrane over the bulging point. It was determined to open directly into the tumor from the vaginal side and prevent what was apparently imminent, a rupture into the bladder. This was done without delay and an abscess containing two or three ounces of pus emptied out. The finger in the cavity showed that there was no opening into the broad ligaments and that the cavity was self-limited, lined with a smooth membrane. The cavity was washed out and packed, and at the time the patient returned home was almost obliterated. Her symptoms of pain and bearing down were relieved entirely and the bladder mucous membrane had regained its normal appearance. There was still some discharge from the wound, but it was gradually and surely lessening.

The origin of this abscess is obscure, and I am at a loss to say just what the cause was, when it began, and where it was located. It could hardly have existed at the time of the original abdominal section and first two curettages, as they were all performed by a skilled gynecologist, and it is not conceivable that he could have overlooked the vaginal bulging, at least. At the curettage of last January, which was done by her family doctor at her home, this tumor was first discovered, and it took him all that time to persuade her to come again to Philadelphia for another operation. Her sufferings finally drove her to it.

The abscess appeared to the investigating finger to be confined to a distinct sac, and not to be such as one would find in connective tissue; in addition the opening seemed to be into a cyst with a distinct wall more than into an ordinary cellular abscess. It no doubt was an abscess of one of the vaginal glandular elements, or, what is more probable, an abscess of one of the fetal ducts running along the vaginal vault. In this connection it is of interest to note that the abscess was situated most distinctly to the right side of the median line. How the infection took place is a greater matter of doubt. Of course

we have the infection and induration of the bases of the broad ligaments and the successive curettements, but, after all, these are probable causes and may be a mere coincidence, as such abscesses have occasionally been noted without any of these elements of causation.

Dr. C. P. Noble.—I have in the hospital a case, so far as the suburethral abscess is concerned, similar to that reported by Dr. Baldy. My case has not the broad-ligament complications. The patient has had, a number of times, discharge of pus from the vagina preceded by severe pain, and she came into the hospital at the conclusion of one of these attacks. On examination an infiltrated area could be felt under the urethra, and the resident, Dr. Tracy, operated and exposed a cystic cavity. No doubt the cavity had contained pus which was recently discharged. At my suggestion Dr. Tracy dissected out the remainder of the sac and sewed it up. Had there been free pus this would not have been feasible. In that case we would have curetted the base of the sac and applied carbolic acid and packed. The patient has made a good recovery. I have seen one other case similar in character, possibly two. These cases, I think, are rare, and the etiology obscure. I remember one case which had discharged through the urethra and in which, presumably, the trouble had come from an infected Skene's duct.

Dr. George E. Shoemaker.—I have now in the ward of the Presbyterian Hospital a patient with a cyst of the anterior wall of the vagina which was dissected out in the median line. The wound was closed with running sutures and the patient got entirely well. This was not a case of abscess, but of a cyst in the median line which had become infected. The patient had been delivered of twins about four weeks before and there was sepsis afterward. On pressure in the vagina this prominent tumor, which stood out between the labia, exuded pus.

The case which Dr. Baldy narrates might have been originally one of those cysts which occur in the upper vagina on one side. That with suppuration would dissect down to the vagina. These cysts in the upper vagina at the side of the cervix are perhaps more common than the distinct suburethral cysts. I recall removing one in a patient of Dr. Lyman in West Philadelphia about four years ago. I have seen two other cases of suppuration between the urethra and vagina, both of which drained into the urethra.

Dr. R. C. Norris.—The subject of suburethral abscess is an interesting one, and those of us who have seen such cases ought to attempt to throw some light upon the etiology by reciting the etiological factors in one's own cases. My first case was one following an operation for extrauterine pregnancy. The operation was an emergency abdominal operation done some weeks after rupture and after suppuration had occurred. Some four or five weeks after convalescence of the patient, seeing her again with

her doctor, my attention was called to the condition in the neighborhood of the urethra, which proved to be a suburethral abscess distending a localized area of the anterior vaginal wall and communicating with the urethra. From a close study of the case, there seemed to have been a burrowing of pus from the base of the broad ligament around the cervix, beneath the bladder, and under the urethra, finally rupturing into the urethra. Drainage through an incision in the anterior vaginal wall was followed by a cure. A second case was of analogous origin. It followed an operation for pus tubes, at a time when we all used silk ligatures, some of which necessarily became infected. In this case burrowing of pus had occurred through small channels leading from the silk ligature, down through the base of the broad ligament, under the bladder and urethra where there was a large collection of pus. The case seemed not unlike the one Dr. Baldy spoke of occurring before the operation for inflammatory disease of the appendages with pus. A third case was one sent by Dr. Callen to the Methodist Hospital. She had a history of puerperal infection. The abdomen was opened and a dense, hard infiltrate found between the layers of the broad ligament on the left side. She had had a history of fever and infection following the birth of a child. An extraperitoneal broad-ligament abscess doubtless had formed, and, after partial resolution or absorption, a caseous mass had been left, which had burrowed out between the cervix and bladder and finally between the vagina and urethra. The abdomen was closed and the pus cavity drained through an incision into the anterior vaginal wall.

The three cases I have had have all had a similar etiology, the focus of infection arising between the layers of the broad ligament and finally leading to suburethral abscess. With the formation of cysts in this region I have had no experience.

Dr. Edward P. Davis presented a paper on

SIX CESAREAN SECTIONS.

The following cases of Cesarean section occurring during the work of one winter illustrate the application of the modern operation to the various complications of parturition.

Case I.—Mulatto, aged 22, second pregnancy. Family history of tuberculosis, personal history good. This patient had been delivered of a dead child after difficult parturition in a maternity hospital in Philadelphia. Her pelvis measured as follows: Anterior superior spines, 25 centimetres; crests, 24½ centimetres; trochanters, 30 centimetres; right diagonal, 20 centimetres; left diagonal, 20 centimetres; external conjugate, 18 centimetres; internal conjugate, 8 centimetres; circumference, 75 centimetres. The fetus was living, heart sounds good, the child in first position,

vertex presentation. The patient came into labor in her lodging and was first seen by the obstetric resident of the Jefferson Hospital, Dr. Smith. He found the cervix partly dilated and a presentation of the right parietal bone. The head was impacted in the pelvic brim. The patient was having strong pains. Recognizing the impossibility of spontaneous labor, the patient was transferred by ambulance to the Maternity. She was asked concerning her wishes regarding further procreation, and requested that childbearing should be made impossible. Celiohysterectomy was accordingly performed. The cervix had been thoroughly stretched by the child's head, and in amputating the body of the womb it was found necessary to close the distended cervix by silk sutures. The abdomen was closed without drainage and the patient made an uninterrupted recovery from the operation. Her child, a female weighing six pounds nine ounces, showed the effects of birth pressure by an indentation in the left parietal bone, which had been in contact with the promontory of the sacrum. Mother and child reacted well from the operation. During the patient's recovery she had an elevation of temperature to 101° F. for several days, with a muco-purulent discharge from the vagina. The abdomen was not distended nor painful, and the abdominal incision healed by first intention. Under the use of vaginal douches this discharge ceased and the patient made a good recovery. When discharged from the Maternity the stump was small and movable and the pelvis was free from exudate.

The patient presented herself some months afterward, stating that some substance was irritating the rectum. On examination one of the silk sutures placed in the stump was found in the rectum and was readily removed. The patient was otherwise in excellent condition.

At the time of operation the attention of those present was called to the fact that necrosis of the stump would probably occur. The fact that the patient had been in labor for some time in her lodging, without aseptic precautions, before she was brought to the Maternity, and the excessively distended condition of the cervix, made necrosis probable. In placing the sutures care was taken to completely bury them and to close the peritoneum above the sutures, so that, should necrosis follow, the necrotic material and sutures could work their way out through the vagina.

Necrosis of the stump occasionally happens after hysterectomy for fibroid tumors. In the Cesarean operation the writer had a

similar experience with one case, in which a vaginal discharge persisted for some time after the operation, and in which a suture was finally discharged. It may naturally be suggested that the use of catgut suture, which becomes absorbed, would not expose the patient to this risk. In the cervix during pregnancy the tissues are so hypertrophied that to secure firm apposition silk is better than catgut. Necrosis of the stump is not a common complication after hysterectomy and has never, to my knowledge, exposed the patient to serious risk.

CASE II.—A negress, aged 23, had borne one child after a very long labor, delivered by forceps. She is a married woman who gave a good family and personal history. The patient is a dwarf of very diminutive stature and having marked scoliosis of the vertebræ, most pronounced in the lower dorsal and upper lumbar region. Her pelvis measured as follows: Anterior superior spines, 24 centimetres; crests, 24½ centimetres; trochanters, 28 centimetres; right diagonal, 18 centimetres; left diagonal, 19 centimetres; external conjugate, 16 centimetres; internal conjugate, 7 centimetres; circumference, 79 centimetres. She was more than nine months pregnant when admitted to the Jefferson Maternity, the fetus occupying the first position, the head above the pelvic brim. The patient greatly dreaded her labor and earnestly requested that it be made impossible for her to again become pregnant. She stated that her husband did not support her and that she was dependent upon her own work for the maintenance of her child and herself. She came into spontaneous labor a few days after admission and soon developed excessively strong uterine contractions. The membranes ruptured early when the cervix was one-third dilated. Upon examination the contractions of the uterus were so strong as to threaten rupture. The head lay across the pelvic brim, with one hand and arm of the fetus beside the head. The patient as soon as possible was delivered by celiohysterectomy in accordance with her wish. During the operation the intestines became excessively distended with gas. As the patient came out from ether she began to strain violently, and it was necessary, in addition to the usual dressings, to apply a broad roller bandage very firmly around the abdomen. This distension persisted for several days, but gradually subsided under tonic doses of strychnia and purgatives. She has made an uninterrupted recovery and is at present a domestic servant in the Maternity. Her child showed the effects of birth pressure by sluggish respiration and excessive compression of the

cranium. He has, like the mother, done well. This patient nursed her child for some time and then was obliged to wean it through lack of milk.

In this case the failure of the head to engage after strong pains which threatened rupture of the uterus justified section, and the mother's request determined the method of operation.

CASE III.—A multipara, aged 35, white, a married woman, was brought to the Maternity by her physician and her husband, having been for some time in labor. She had had seven pregnancies, one with twins which terminated in spontaneous birth of the twins. The other children had perished in birth from dystocia. During the present labor efforts had been made to deliver her by forceps. She had been profoundly anesthetized and when admitted was in a condition of extreme shock. She had lost considerable blood and her radial pulse was barely perceptible. Her pelvis measured: Anterior superior spines, 27 centimetres; crests, 27 centimetres; trochanters, 31 centimetres; right diagonal, 19 centimetres; left diagonal, 21½ centimetres; external conjugate, 18 centimetres; internal conjugate, 8 centimetres; circumference, 81 centimetres. The cervix was fully dilated. A large head was wedged into the brim of the pelvis and the cervix was edematous from pressure. The patient was at once stimulated freely, and in my absence craniotomy was done, as the child was dead, by Dr. Stricker Coles, Demonstrator of Obstetrics. Although the skull was thoroughly emptied, safe traction failed to cause the child to descend. Portions of the cranial bones were delivered, but the fetus could not be extracted.

On seeing the patient I found her rallying slightly from shock, but in a condition of great weakness. She was still anesthetized and the attempt at craniotomy had just been made. The indication seemed to be to deliver her as quickly as possible by the most speedy method. Accordingly the abdomen was opened and a Porro operation performed. The cervix was secured by two clamps, the abdomen closed down to the stump, which was left outside the peritoneum, freely powdered with iodoform and boracic acid and covered with sterile gauze. Two quarts of saline fluid were given to the patient by intravenous transfusion. She rallied slowly from the operation, the stump of cervix sloughed away, the internal surface of the cervix was discharged by necrosis, and she finally left the Maternity in good general condition. Her recovery was unexpected, as the interior of the

uterus must have been infected by efforts at delivery made before her arrival.

In this case the question very naturally occurs: Would not the removal of the entire uterus, unopened, have been the better operation? At the time the indication for haste was imperative. The removal of the unopened uterus may be done speedily and is justifiable in all cases in which the fetus is dead, the uterus infected, and the patient cannot be delivered through the vagina. The case is one of the very few in which Porro's operation seemed indicated.

CASE IV.—Primipara, aged 36, a married white woman. Family history of tuberculosis and personal history of tuberculous infection of both hip joints at the age of 10. This had left the patient so disabled that she walked upon crutches and had very limited motion. It was impossible for her to completely extend the thighs. The examination of the sternum and ribs showed the characteristic evidences of rachitis in addition to the disease of the hip joints. The patient was fairly well nourished. Her pelvis measured: Anterior superior spines, 25 centimetres; crests, 25 centimetres; trochanters, 27 centimetres; right diagonal, 20 centimetres; left diagonal, 22 centimetres; external conjugate, 17 centimetres; internal conjugate, 7½ centimetres; circumference, 85 centimetres. Palpation of the pelvis confirmed the diagnosis of a rachitic pelvis with an oblique contraction. The fetus occupied the first position, the head at the pelvic brim, the heart sounds strong and regular. The patient and her husband agreed to operation and also requested that the patient should not be exposed to further danger from childbearing. The patient was put in the best possible general condition, and labor came on spontaneously with good uterine contractions. When dilatation was partly complete the head showed no signs of engagement, but remained at the brim of the pelvis. Celiohysterectomy was accordingly performed, some difficulty being experienced in putting the patient in a convenient posture owing to the contraction of the tissues about the hips. Mother and child made a complete and uncomplicated recovery. Upon examining the uterus after removal several intramural fibroids of small size were found.

The patient has since reported in excellent general health and her child is correspondingly well. She formed no exception to our experience that these patients nurse the child quite as well as those from whom the uterus is not removed.

CASE V.—Primipara, married, white, aged 27. In childhood

had severe scarlatina, and has repeatedly had uric acid in considerable quantity in the urine. She was between seven and eight months pregnant. She had been brought to the city for consultation and was seen with Dr. H. A. Hare. Four weeks previously she had swelling of the feet and had been passing about one quart and one pint of urine in twenty-four hours. On examination the patient had general dropsy. The second sound of the heart was sharply accentuated and arterial tension much increased. Her sight was dim and her tongue red and swollen. The size of the uterus indicated thirty weeks' gestation. The heart sounds were plainly heard on the left side and the head was above the pelvic brim. The patient was evidently highly toxemic and in imminent danger of eclampsia. On the day following, her eyes were examined by Dr. de Schweinitz, who found the retinæ much swollen with serum. An examination of the urine showed hyaline and granular casts, with abundant granular débris and albumin in abundance. The patient had been given calomel the night before and the urine had a specific gravity of 1029 and a percentage of urea approximating 2. She was transferred to the Presbyterian Hospital in a private room. On the day following she had grown rapidly worse, and labor was induced by dilating the cervix under chloroform and introducing bougies. The cervix was tightly closed and it was with difficulty that bougies could be inserted. The induction of labor was followed by eclampsia a few hours later. The bougies were at once removed, when the cervix was found still tightly closed, without dilatation and without softening. The patient's condition was extremely grave and it was determined to empty the uterus in the most rapid way possible. Accordingly the patient was anesthetized and the child delivered by abdominal incision. On section the tissues were found a dark vivid red in color and blood oozed freely. The uterus was packed with gauze and the cervix dilated sufficiently for drainage. During the anesthesia Dr. Hare gave the patient intravenous saline transfusion. She reacted well from the operation, having one slight convulsion as she recovered from the ether. She passed into coma within a few hours which ended fatally. The child survived the mother between three and four hours.

The treatment of eclampsia by Cesarean section was first brought before the profession by Halbertsma, of Utrecht. His success led German operators to try the procedure, and in 1899

Hillman[1] at Jena collected 40 cases of eclampsia for which Cesarean section had been done. Of these mothers, 19 recovered, 21 died. Of the 41 children, 23 lived and 18 died. Seven patients had convulsions after delivery by section. At the time when Hillman published his paper he was able to collect considerable literature upon the subject.[2] Olshausen,[3] in a paper read before the Obstetrical Society of Berlin, reported a case of Cesarean section for eclampsia, and stated that among 250 cases of eclampsia he had seen 3 in which Cesarean section was indicated. Of these 3, 2 recovered and 1 died. Dührssen[4] reports an interesting case of vaginal Cesarean section for eclampsia. The fetus occupied a transverse position, the patient being about six months advanced. The cervix and lower uterine segment were opened through the vagina, a foot of the child grasped, and the patient delivered. Her delivery was not accompanied by more than usual difficulty. She perished some time after from pneumonia. Another case of vaginal section for eclampsia is reported by Kouwer, of Holland.[5] In this case the patient was moribund at the time of operation, and the operation simply demonstrated the feasibility of the method. Dührssen contrasts this operation with his method of delivery by deep incision of the cervix, and believes that, in some cases where the cervix is especially short and resisting, vaginal section is to be chosen. Biermer, of Wiesbaden,[6] performed Cesarean section with trans-

[1]Monatsschrift für Geburtshülfe und Gynäkologie, Band x., Heft 2, 1899.

[2]Bidder, F.: Ueber 425 Falle von Eklampsie; Archiv f. Gynäkologie, 1893, No. 44. Döderlein: Die Therapie der Eklampsie; Münch. med. Wochenschrift, 1894, No. 26. Dührssen: Ueber die Behandlung der Eklampsie, 1. Theil—derselbe, Ueber die Behandlung der Eklampsie, 2. Theil; Archiv f. Gynäkologie, 1892 No. 42, 1893 No. 43—derselbe, Ueber vaginalen Kaiserschnitt; Sammlung klin. Vorträge von Volkmann, No. 232. Kettlitz: Ueber Kaiserschnitt wegen Eklampsie; Inaugural-Dissertat., Halle, 1897. König: Eklampsie—Sectio cæs. post mortem; Centralbl. f. Gynäk., 1899, No. 16; Monatsschrift f. Geburtshülfe und Gynäkologie, viii., 4, 70; Versammlung Deutscher Naturforscher u. Aerzte. Lenander: Frau den kirugiska kliniken i Upsala. Löhlein: Ueber Häufigkeit, Prognose und Behandlung der puerperalen Eklampsie; Gynäkol. Tagesfragen, 1891, Heft 2; Genfer Congressbericht, Monatsschrift f. Geburtshülfe und Gynäkologie, Band iv., No. 5. (Upsala Läkare-fören. forhandl. 1899.)

[3]Centralblatt f. Gynäkologie, No. 2, 1900.

[4]Archiv f. Gynäkologie, Band lxi., Heft 3, 1900.

[5]Centralblatt für Gynäkologie, No. 19, 1900.

[6]Münchener med. Wochenschrift, No. 47, 1899.

verse incision of the fundus for eclampsia. The child was born living; the mother succumbed from eclamptic coma after the operation. Sippel,[1] of Frankfort, performed Cesarean section upon a primipara aged 17 for eclampsia. The operation proceeded without difficulty. An asphyxiated child was born, resuscitated, and lived. The mother recovered from the operation and died upon the fifth day from hemorrhage from the intestinal tract. Upon autopsy an ulcer of the duodenum was found which had opened vessels of considerable size.

My experience in Cesarean section for eclampsia comprises the cases reported in this paper and one other. My first case was that of a primipara who had suffered from hip-joint disease and who had a sinus leading to necrotic bone. She had a pelvis contracted so highly that craniotomy was not indicated. She had been seen by a physician, who had selected her for Cesarean section. She became eclamptic and after severe convulsions was brought to the Jefferson Maternity. On admission her condition was so grave and her respiration so impaired that Cesarean section was performed almost *in mortua.* The child was dead, but the mother was greatly relieved by the operation. Her breathing became better, she became conscious, and survived the operation three days. Upon autopsy advanced double nephritis and extensive degeneration of various organs of the body were found.

The question naturally arises in this connection: Is it of paramount importance to empty the uterus as soon as possible in cases of eclampsia? To this question we give a negative answer. Of first importance in the treatment of eclampsia is the control of the convulsions and the stimulation of the patient's excretory processes. When this has been begun, if the patient still shows any tendency to improvement, if the abdomen is tense and the cervix hard and undilated, Cesarean section must be considered. Its success or failure will depend upon the degree to which the patient has been poisoned by the toxins within her body. In some cases the patient is beyond hope when the physician first sees the case; in others, even desperate, recovery follows.

In Cesarean section for eclampsia there is especial danger from hemorrhage. This tendency to bleed is seen in all highly toxemic patients, and is illustrated in Sippel's case of death from intestinal hemorrhage. In my second Cesarean operation

[1]Monatsschrift für Geburtshülfe und Gynäkologie, August, 1901.

for eclampsia now reported this tendency to ooze was evident, but was controlled by gauze packing.

CASE VI.—Primipara, married, white, gave a history of good general health, but was not of robust physique. She was first seen a year before her confinement, when she had oozing of blood from the rectum following exposure to cold. She had previously had an early abortion soon after marriage. During her pregnancy the patient was in fairly good health, was not well nourished, and excreting badly. As she reached the latter months of pregnancy, her appetite failed, digestion and excretion were badly performed, and she passed into a condition of mental apathy closely resembling melancholia. Her nurse was placed with her and she was carefully fed and improved in physical condition, although the mental state remained unaltered. Her pelvis was slightly contracted at the brim, but was otherwise of average measurements. The fetus occupied the first position, breech presentation. As pregnancy drew to its close it became evident that the fetus was large and very well developed. This was expected from the development of the patient's husband. The presenting part did not descend into the pelvis, but the child remained high in the abdomen. From the patient's physical and mental condition it was evident that but little voluntary effort could be expected during labor. The patient was considerably above the average age of childbearing and the pelvic floor was thick and resisting. Difficult parturition, with possible death of the child, was expected. The patient's husband was warned of the complications existing and the dangers of the case fully stated. The patient was asked to go to a private surgical hospital for labor, but this was declined. The husband was informed that he was at liberty to have consultation either before or during labor.

Labor came on spontaneously with feeble and ineffectual pains. The breech of the child did not descend and the cervix dilated very slowly. Although the patient was given rest by sedatives, no substantial advance was made and consultation was called. The writer's opinion had been that to save the life of the mother and child, and to protect the mother from severe injury, delivery by abdominal incision was necessary. This opinion was based upon the evident development of the child, the lack of expulsive force on the part of the mother, the unfavorable position of the child which exposed it to greater danger in delivery, and the resisting and inelastic pelvic floor. To have delivered the

child through the vagina by breech presentation would have exposed it to great danger and have lacerated the mother severely.

There was no dissent from this opinion in consultation. Section was proposed to the husband and immediately accepted.

A room was suitably prepared as soon as possible, assistants summoned, portable sterilizers carried to the house, and the patient delivered by celiohysterotomy. A large, finely developed male child, weighing nine pounds, was delivered in excellent condition. As the mother had been long in labor and the uterus acted sluggishly, it was packed with iodoform gauze which was brought into the vagina through the cervix. The uterine muscle was trimmed at one point in its edge to secure accurate approximation. The womb was closed with silk, the peritoneum with fine catgut. Under free stimulation the patient reacted well. The gauze was removed through the vagina on the second day after the operation. The patient's highest temperature was 101° F. She nursed her child for a short time.

After delivery the patient gradually regained her normal mental condition. This recovery was slow and the mental state occasioned anxiety for some time. She, however, made a complete recovery and with her child is in excellent condition.

In this case the Cesarean operation was chosen upon purely elective grounds. Recognizing the life of the child as an important factor, the question arose: In what way can the lives of mother and child be saved with the least injury and suffering to both? The fetal mortality of breech presentation is so much higher than that of vertex presentation that the difference could not be neglected. To deliver a large child as rapidly as is necessary in breech presentation through a birth canal inelastic and undilated must cause severe injury to the mother. The absence of efficient expulsive effort on the part of the mother made action inevitable. Fortunately the husband appreciated the situation and by his prompt and efficient help made a successful termination of the case possible.

A further disadvantage lay in operating in a private house. This cannot, however, be avoided in some cases, and it is possible, by using portable sterilizers, previously sterilized dressings, and trained assistants, to operate safely under these conditions. No one can perform obstetric surgery competently who has not these agents at his disposal. While patients should go to private hospitals for difficult confinement, some cannot or will not do so, and such must be delivered at home. The added risk

should be explained to them, and their failure to comply with the physician's wish must be their own responsibility.

DR. STRICKER COLES presented a paper on

THREE CASES OF CESAREAN SECTION.

CASE I.—V. T., aged 19, primipara, a dressmaker; family history good; patient had usual diseases of childhood; menstruation first at 16, regular and painful; menstruation last seen on September 5, 1899. Entered the Maternity on May 12, 1900. At that time patient was in good health, except continual headache and constipation. Examination showed that the child was in the first position; heart sounds to the left; placental souffle not heard; the uterus a hand's breadth above the umbilicus. The pelvic measurements were as follows: Anterior superior spines, 25½ centimetres; crests, 25½ centimetres; trochanters, 29½ centimetres; right diagonal, 20½ centimetres; left diagonal, 20 centimetres; external conjugate, 17 centimetres; circumference, 70 centimetres. The patient remained in the Maternity a week and then left. Nothing was heard of her until June 8 at 11 P.M., when the resident physician was sent for at her home. On examination he found the membranes had ruptured, the os completely dilated, but the head could not be made to engage. She was brought into the Maternity at 12.30 A.M. June 9. On further examination the head could not be made to engage, and there seemed to be so great disproportion that Cesarean section was selected as a method of delivery. After thorough preparation the abdomen was opened, the uterus delivered, and hot towels packed around the uterus. An incision was made in the anterior wall of the uterus, passing through the outer edge of the placenta. The child and placenta were rapidly delivered and the broad ligaments clamped on either side with pedicle forceps. There were three pedicle sutures on each side, the first including the ovarian artery, the second the artery of the round ligament, and the third the uterine artery. The uterus was then amputated through the lower uterine segment. The stump of cervix was closed with heavy silk sutures and the peritoneum closed over the entire raw surface with small silk. The peritoneum of the abdominal wall was closed with catgut and the skin and muscle with silkworm gut. The child was in a condition of apnea when delivered, but was easily resuscitated. It was a female weighing seven pounds two and one-half ounces. The measurements of the child's head were as follows: Maximum,

14 centimetres; occipito-mental, 13½ centimetres; occipito-frontal, 12 centimetres; suboccipito-bregmatic, 10½ centimetres; fronto-mental, 9 centimetres; biparietal, 9½ centimetres; bitemporal, 8¼ centimetres; bimastoid, 8 centimetres; bisacromial, 12 centimetres; length of child, 48 centimetres. The patient's temperature did not rise above 101°. The stitches from the abdominal wall were removed on June 19. The wound was in good condition, union being perfect. On July 9 vaginal examination showed the cervix small and movable and no exudate in the pelvis. Mother and child were discharged. This patient has been seen from time to time since then, and at the present time she is suffering from a movable kidney and expects to undergo an operation for this some time in the near future.

Celiohysterectomy was performed in this case, as she did not desire to become pregnant again, and there was a question of the uterus being septic, as she had been in labor without medical care for some time. She remained well for two months after leaving the hospital, and then began having nervous symptoms and abdominal pain. The question naturally arises whether it would not have been better to resect the tubes and to have left the uterus and ovaries. This may have lessened the risk of nervous phenomena due to the removal of the ovaries, and also the displacement of the kidney.

CASE II.—M. L., aged 19, primipara; family history of tuberculosis; patient had measles and diphtheria in childhood; menstruation first at 18, regular and painful; last menstruation seen in September, 1900. When applying at the Maternity on February 23, 1901, she was in good condition, but suffered from constipation. On examination the pelvic measurements were found to be as follows: Anterior superior spines, 23 centimetres; crests, 24 centimetres; trochanters, 30 centimetres; right diagonal, 20 centimetres; left diagonal, 19½ centimetres; external conjugate, 19 centimetres; internal conjugate, 8 centimetres; circumference, 76 centimetres. The uterus was two fingers' breadth above the umbilicus. Fetal heart sounds were heard on the left side. Placental souffle not heard. Patient returned to the Maternity on May 10 and May 25, bringing specimens of urine which were found to be normal. On June 21 Dr. Barnes was called by the resident physician to see the patient at her home. Frequent strong uterine contractions every two to four minutes were present; the patient was very restless and nervous and apparently suffering much pain. The heart sounds of the

child were easily heard on the left side. Vaginal examination under chloroform revealed the following: Promontory of the sacrum readily touched; membranes ruptured; head not engaged nor could it be made to engage; parietal presentation; measurement of the internal conjugate, 8 centimetres. On examination after entering the Maternity the head was found resting on the symphysis and promontory of the sacrum, and could not be made to engage. The patient was prepared for abdominal section and delivery accomplished as in the case above, except that the uterus was not removed. It was thoroughly cleansed and a piece of iodoform gauze carried down into the cervix and the cavity of the uterus packed. Hemorrhage was controlled by manual pressure. The uterus was sutured with heavy interrupted silk suture through the muscle; the peritoneal surface was closed with fine silk continuous suture. The abdomen was closed as in the case above. The gauze was removed in thirty-six hours. The patient reacted well after the operation, was not nauseated at all from the anesthetic, and had no pain. She only complained of not getting enough to eat. The temperature rose to 100° after operation and afterward was normal. The child was not asphyxiated and was a female weighing six pounds eight ounces. The measurements of the child's head were as follows: Maximum, 13½ centimetres; occipito-mental, 13 centimetres; occipito-frontal, 12 centimetres; suboccipito-bregmatic, 9½ centimetres; trachelo-bregmatic, 10½ centimetres; fronto-mental, 8½ centimetres; biparietal, 9 centimetres; bitemporal, 8 centimetres; bimastoid, 8 centimetres; bisacromial, 12 centimetres; length of child, 48 centimetres. On examining the child's head there was found a spoon-shaped depression where the head rested on the promontory of the sacrum. This disappeared in four or five days. The stitches from the abdominal wall were removed on July 5. Union was found to be good. On July 19 vaginal examination showed the uterus to be anteflexed and movable, involution good. The child was in good condition. Mother and child were discharged. The mother and child were seen on October 20 and they were both doing well.

This patient made a perfect recovery and she did not suffer more than after normal delivery; the only difference was a few days longer in bed. This case contrasts well with one seen during the same week that had been delivered by difficult forceps application, causing severe lacerations extending into the peritoneal cavity through the right lateral vaginal vault. Peritonitis

followed, resulting in the death of the patient in three days. These patients had about the same disproportion between the child and the mother, and other conditions were very similar.

CASE III.—F. W., aged 39, Vpara; family history tubercular; scarlet fever and measles during childhood; menstruation at the age of 12, regular, not painful, duration four or five days; last seen in August, 1900. The first two labors were normal but very difficult. Last labor three years before; child delivered dead with forceps. Miscarriage eighteen months ago, and at that time she was in bed for five weeks and afterward was not well and applied to a Boston hospital, where she was examined and told that she had a tumor on the right side of the uterus and she should have it removed, but declined to undergo an operation. She was admitted to the Maternity on April 5, 1901. Patient in good condition except for constipation, and the urine at different times showed urea to vary from 0.7 of 1 per cent to 1.2 per cent. The uterus was distending the tissue at the sternum; heart sounds were heard on the left side; placental souffle not heard; child in the first position. The pelvis measured as follows: Anterior superior spines, 26½ centimetres; crests, 27½ centimetres; trochanters, 33 centimetres; right diagonal, 23 centimetres; left diagonal, 22 centimetres; external conjugate, 20 centimetres; circumference, 99 centimetres. On May 12 uterine contractions began at 6 A.M. The membranes ruptured at 12 M. At 4 P.M. the os was fully dilated, the head above the pelvic brim. The patient was given ether and Tarnier's forceps applied with the patient in Walcher's position. Two attempts were made to deliver, but the head could not be made to engage. The abdomen was opened and the child delivered in the usual way. On the right side of the uterus was noticed a tumor the size of an orange. It was thought to be a parovarian cyst. The patient had been well before and there had not been elevation of temperature. The uterus was closed. On attempting to remove the adherent intestines and omentum from the tumor, it was found that the intestine at one point was joined by a strong band of adhesions. This had to be incised. In trying to prevent opening the intestines, incision was made close to the tumor, which opened a pus tube, and on examining the intestine there was found to be an opening, which showed that the pus tube was discharging into the intestine. The opening in the intestine was closed by Czerny-Lembert suture. The opening in the pus tube was immediately closed with a piece of gauze to prevent the

escape of pus, and the tumor was then dissected out entire. The peritoneum was brought over the raw surface, thus closing the raw surface left after removing the tumor. The patient was not in a very good condition and had to be stimulated with strychnine and hypodermatics of ergot. The entire operation occupied about an hour and a half. The child was asphyxiated and was resuscitated with difficulty, when the breathing for the first few hours was about eighty. The child was a male weighing ten pounds twelve ounces. The head measurements were as follows: Maximum, 14 centimetres; occipito-mental, 13½ centimetres; occipito-frontal, 12 centimetres; occipito-bregmatic, 10 centimetres; trachelo-bregmatic, 9½ centimetres; fronto-mental, 9 centimetres; biparietal, 9½ centimetres; bitemporal, 8 centimetres; bimastoid, 7½ centimetres; bisacromial, 11 centimetres; length of child, 51 centimetres. On May 22 all of the stitches in the abdominal wall were removed except six; these were removed on the 26th. On July 19, 1901, a vaginal examination showed the uterus to be anteflexed, well involuted, and movable. Nothing could be felt on the right side. At the present time the mother and child are both in good condition.

This patient gave no indications of the existing pus tubes during pregnancy, as the pus had a free opening into the intestines. The pus sac as removed was sent to the pathological laboratory, but unfortunately the report was lost. The pathologist remembered making the examination and found streptococci and staphylococci. There were no gonococci present. The author was unable to find a case of pyosalpinx complicating Cesarean section. Cases are reported of pyosalpinx operated upon before pregnancy was very far advanced. This patient made a good recovery and is better now than she has been since the miscarriage, which apparently was the beginning of the pyosalpinx.

Dr. R. C. Norris presented a paper on

A CASE OF CESAREAN SECTION,

The following case is reported this evening in order to evoke a discussion on the indications and the technique of Cesarean section—an operation becoming more frequent since abdominal operators have sprung into existence in the remote towns and villages of every State, and since many well-known exponents of the obstetric art have advocated a wider range of indications for delivery by abdominal incision.

It appears that the dawn of the twentieth century has sur-

rounded this operation with a glare that imparts a ruddy enthusiasm to the successful abdominal surgeon, and there is danger of older and well-tried obstetric methods falling by the wayside, their more brilliant competitor eclipsing them, for a time at least. After reading the notes of my case—the indication in that case being an absolute one—I shall ask a discussion on the following topics:

(a) The relative indication for the operation in labor obstructed by pelvic contraction.

(b) Its value in the treatment of eclampsia and placenta previa.

(c) The choice of operation—whether the Sänger or Porro operation should always be selected; and if not, then the conditions determining the choice of the one or the other operation.

CASE.—Mrs. J. C., primigravida, aged 27. Admitted to the Philadelphia Hospital May 11, 1900. Last menses September 15, 1899. Pelvic measurements: interspinous, 25¼ centimetres: intercristal, 25 centimetres; external conjugate, 17 centimetres; right diagonal, 19 centimetres; left diagonal, 19½ centimetres; intertrochanteric, 24 centimetres; circumference, 80 centimetres; internal diagonal conjugate, 7¾ centimetres; true conjugate (estimated), 6 centimetres.

Labor expected June 22. Operation, Cesarean section, proposed for June 20. Labor pains on evening of June 18 and operation the following morning. Rubber tubing thrown around cervix, and, a Porro operation having been decided upon, the tubing was immediately tightened. A longitudinal uterine incision found the placenta situated on the anterior uterine wall. There was very little hemorrhage. After ligating the ovarian and uterine arteries, the uterus was amputated at the level of the internal os, the stump was closed with interrupted catgut sutures, and the edges of the peritoneum were sutured over the excised broad ligaments and the stump with a running stitch of catgut. The notes of the case show the following: Amount of ether given, 5½ ounces; duration of anesthesia, forty-five minutes; temperature after operation, 97.3°, pulse 103, respirations 22; reaction prompt; child weighed 7¾ pounds; next day pulse and temperature normal; convalescence normal; mother and child discharged from hospital July 12, both enjoying good health.

Without presenting at this time, and reserving for the discussion, the arguments in support of my position on the several

points I have asked you to discuss, I may briefly summarize my convictions as follows:

1. The relative indication for Cesarean section for pelvic contraction ceases to exist when the conjugate diameter is above eight centimetres and the child's head is found, by vaginal examination under ether, to be not abnormally large.

2. In my experience I have never seen a case of eclampsia or placenta previa which in my judgment could not be delivered more advantageously by other means than by Cesarean section.

3. As to selecting the Sänger or the Porro operation, my choice usually is the latter, based upon the most recent statistics; upon the freedom from unpleasant, not to say dangerous, complications and sequelæ of the Sänger operation, such as infection, hemorrhage, parietal adhesions or fistulæ, subsequent uterine rupture, and the possible necessity for repeated Cesarean sections; upon the facility and rapidity of the technique of the Porro operation; and, finally, upon the choice of the patient and her husband, which, however, will usually be determined by the advice of the operator.

Although the Sänger operation can be accompanied by resection of the tubes and sterility thus produced, the other advantages of the Porro should usually make the latter operation the one to be selected.

Dr. C. P. Noble.—I would like to ask Dr. Norris on what statistics the preference for the Porro operation is based. It is my opinion that those who operate most prefer hysterectomy to the Porro operation.

Dr. R. C. Norris.—I hold in my hand a reprint of an article by Zinke, of Cincinnati, on Cesarean section in placenta previa, in which is given the mortality of modern Cesarean section, quoting different authors. His tables do not state the respective mortalities of the two operations, and I know of no large number of recent Porro cases collected from many operators. The Sänger method has been more generally employed, and his table doubtless comprises both operations. The mortality varies up to 16 per cent, and the mortality of 108 Porros collected by Lusk (1892) is 15 per cent. More recent statistics of a few selected operators make a better showing. At the Congress held in Amsterdam in 1899 Pinard gave a résumé of Leopold's, Olshausen's, and Zweifel's statistics as follows: the conservative operation, 5.8 per cent mortality; the Porro operation, 3.7 per cent mortality.

Dr. George M. Boyd.—The papers to which we have listened bring before the Section broadly the discussion of the field of Cesarean section, its indication, and the choice of operation. We have ten Cesarean sections with one death, if I am right in what

I have heard: Dr. Davis reports six cases with one death, Dr. Coles three cases with recovery, and Dr. Norris one case with recovery. I am glad to have had the opportunity of hearing these reports and to know that the field of usefulness for the Cesarean operation is increasing. It seems to me that it will increase and can only increase by selection of operation. Celiotomy and hysterectomy narrow the field of usefulness for the Cesarean section.

In regard to the indication for Cesarean section, I feel that we have about reached the time when the child's life, under certain conditions, alone will justify the operation.

Regarding the Cesarean section for eclampsia, the number of operations yet performed is limited and I feel that its usefulness has not been tested. I would favor its use in certain cases. We cannot yet form any positive opinion as to its usefulness in certain cases of placenta previa. It is my belief that, in a few cases of central implantation in which the hemorrhage has been slight and the patient is in good condition, Cesarean section would give us the best results. I feel that only in a very few cases of placenta previa should we resort to this operation. I cannot agree with some that the maternal mortality in placenta previa is a very low one. We all admit that the fetal mortality is high, and in cases of central implantation of the placenta we may not see the cases early. I believe obstetric cases are studied more closely to-day than they have been in the past, and that we will see cases of eclampsia and placenta previa earlier than heretofore, and that the patient will be in condition warranting the section.

I believe the choice of operation depends upon the case. Celiohysterectomy and celiohysterotomy have each a field of usefulness. One is more mutilating than the other and may not always be justifiable to produce sterility. I have had one celiohysterectomy for fibroid tumor obstructing the pelvis, seven celiohysterotomies. The majority of the cases have been in good condition and it was possible to make the choice of operation. The celiohysterotomies have done as well as the celiohysterectomies. I believe, also, that it is a simpler operation. Dr. Davis reported one case in which the breech presented and in which there were other conditions demanding Cesarean section. Here was a case which clearly indicated celiohysterotomy. The same patient may become pregnant again and be easily delivered, possibly without forceps.

Dr. C. P. Noble.—My experience with this operation is not as large as that of some of the other speakers, yet I cannot help but have some positive views upon the matter. I feel that the present tendency to increase the indication for Cesarean section has a good basis. A good many women and babies are both injured and lost when both could be saved by Cesarean section. In a general way I am in sympathy with the present tendency to broaden the operation—not only on account of the mother, but of the child. The life of the child is a matter for serious con-

sideration, and I am not in sympathy with the old view that the child should be sacrificed without question, merely for very slight improvement in the chances of the mother.

With reference to the Cesarean section in placenta previa, we discussed that question at the County Medical Society recently and I cannot say that my views have been changed by what I have seen or read since. My personal experience with placenta previa has been very satisfactory with the older methods of treatment. I have had one fatal case only; and while I don't remember the exact number of cases of placenta previa I have seen, it must be at least a dozen and probably is larger. In the one fatal case the patient was exsanguinated when first seen and died some time after delivery, not having lost an appreciable amount of blood during the delivery. Death occurred because she was not delivered sufficiently early. I believe the majority of cases can be successfully treated by version with low mortality for the mother and relatively high for the child. If the Cesarean section finds a broader field in placenta previa it is my opinion that the indication will be on the side of the child rather than on the side of the mother. If I were called in a case of placenta previa in an old primipara with firm tissues, or if I had reason to believe that there was a big baby or that the mother's pelvis was relatively small, these conditions would influence me in favor of Cesarean section. With a roomy pelvis and a not unusually large child I would deliver by the feet.

With reference to the general question as to whether we should select celiohysterotomy or celiohysterectomy, I have never been in favor of hysterectomy, unless there is some special reason in an individual case. Unless my reading is seriously at fault, I think that in most of the larger maternities hysterotomy is the preferred operation. I think the burden of proof rests on those who wish to take out the uterus to justify their position. The point made by Dr. Norris, that a woman is very apt to take the advice of her doctor, is a good one; so that any one who wishes to do a hysterectomy can easily have the opinion of the patient that she does not want to have any more children. When a woman is pregnant and suffering the pangs of labor her judgment is not good.

Dr. W. Reynolds Wilson.—It seems to me that in the list of cases reported the reduction in the conjugate diameter to eight centimetres is a rather indefinite indication for Cesarean section, except where a general contraction of the pelvis may have been noted. A conjugate diameter of eight centimetres is scarcely sufficient to warrant an elective operation. The head diameters described in Dr. Coles' paper were measured after the extraction of the child through the uterine incision; the engaging diameters were of course very much in excess of what they would have been if there had been a possibility of moulding. The head measurements are, therefore, only of relative value in determining the necessity for Cesarean section.

I think that cases selected for Cesarean section without due consideration of the possibility of moulding of the head are faulty cases; in my own experience I have found that the attempt to apply the forceps, properly carried out, had not interfered with the Cesarean section which sometimes had been needed to complete delivery. I therefore think that a little longer observation of labor in individual cases with attempted extraction by means of forceps, together with the careful estimation of the size of the child and a study of the history of the case, will, in the majority of cases, call for the performance of Cesarean section, not as an elective operation, but rather as a means of completing labor.

DR. J. M. BALDY.—The only trouble with Dr. Wilson's advice of the prior use of the forceps, etc., would be to prevent about three-quarters of the Cesarean sections. There is a growing conviction outside of obstetric circles that there are too many Cesarean sections done. The cases reported to-night are fair examples of this, almost all having a diameter of about eight centimetres.

The whole question of Cesarean section in regard to eclampsia is far from being settled in the affirmative, and the day will come shortly when it will not be done at all. There is great question whether it is advisable to empty the uterus at once in a large number of cases; convulsions go on, and in a few cases originate even after the uterus is emptied. I cannot see how in that particular class of eclampsia cases Cesarean section can do good; in fact, it does distinct harm in delaying other proper treatment—eliminating treatment.

As far as hysterectomy and hysterotomy are concerned, I am not in accord with the opinion of the majority of men. I believe that any man who puts a woman in the position of having a second Cesarean section is far from doing his duty. It is not right to use his judgment, or her so-called judgment, or any other judgment in regard to the matter. If a woman is once put to the test of Cesarean section in giving birth to a child, the cause being an incurable one and the indications for the operation absolute, a physician is not in any sense of the word justified in putting her to a second test. The woman ought to be saved the possibility of a second pregnancy. She has done her duty fully to her family and mankind in childbearing when she has gone through the first one. I would choose myself, in sterilizing a woman, to do hysterectomy. I believe that in every case where the woman has had Cesarean section, and in a second pregnancy another Cesarean section would be necessitated, the second pregnancy ought to be made impossible, in spite of what all the Germans ever born say to the contrary. In cases of placenta previa we will soon hear the last of Cesarean section. The cases which are too bad to be treated successfully by the ordinary methods will usually be killed by the operation.

DR. EDWARD P. DAVIS (closing).—Cesarean section in the treat-

ment of eclampsia has not been practised sufficiently long to enable us to arrive at a positive opinion regarding its merits. As I stated in the paper, I do not believe pregnancy should be interrupted in most cases of toxemia and eclampsia. If the uterus shows a disposition to empty itself it should be aided to do so, but otherwise our treatment should be prophylactic and medicinal.

The Porro operation performed in this case was done upon the following grounds: The cranioclast and cephalotribe had failed to deliver a dead child in an infected uterus. To have performed version would have exposed the mother to injury of the uterus from the perforated cranium and also to the danger of uterine rupture. The choice lay between the Porro operation and the removal of the entire uterus unopened. The former was chosen and proved successful.

In the four remaining cases Cesarean section was chosen because we believe that the operation gives, in such cases, the best results for mother and child. In the case of the primipara whose child was in breech presentation, an unusual combination of circumstances threatened the lives of mother and child: the development of the fetus, its position and presentation, the age of the mother, the rigidity of the birth canal, the mental and nervous state present, and the very strong desire on the part of the parents to save the child, required a method of delivery which gave at least an equal chance to mother and child. Regarding the choice of operation, there was no dissent in consultation.

The remaining three operations were performed for pelvic contraction. In this class of cases we believe that the indications for the elective Cesarean section are different to-day from those which governed us ten years ago. If we refer to the recent literature of Cesarean section we find this belief indicated by Braun-Fernwald,[1] Pinard,[2] Leopold,[3] Krönig,[4] Reynolds,[5] and Jewett.[6] The latest comprehensive discussion of the subject occurred at the last meeting of the American Gynecological Society, held May 30 to June 1, 1901. Under the title of "Indications for Cesarean Section as Furnished by Pelvic Contractions," Williams presented a paper giving the results of his observations in 2,123 cases in the Obstetrical Department of the Johns Hopkins Hospital. He concludes, from his own observations and the recent literature of the subject, that in uninfected cases the relative indication for Cesarean section should be advanced to eight and a half centimetres for flat and nine centimetres for generally contracted pelves. When the relative indication is present the woman should be allowed to go into the second stage of labor and have bearing-down pains for one hour, when, if the

[1]Archiv für Gynäkologie, Band lix., Heft 2, 1899.

[2]Annales de Gynécologie, August and September, 1899.

[3]Münchener medicinische Wochenschrift, No. 34, 1899.

[4]Centralblatt für Gynäkologie, No. 24, 1901.

[5]Obstetrics, January, 1900.

[6]Brooklyn Medical Journal, October, 1900.

head does not show signs of moulding or descending, Cesarean section should be performed instead of forceps upon the movable head or version. As illustrating the results obtained by such treatment, he collected 162 operations with 5 deaths, a mortality of 3 per cent. The writer's personal experience in Cesarean section numbers 14 uninfected before delivery, with no mortality for mothers and children.

In women infected and exhausted in prolonged labor before the operation is done, the results are far less satisfactory. The mortality of labor rises with each ineffectual attempt to deliver. In view of this it is especially important that after the patient has been sufficiently long in labor to develop strong pains, unless engagement of the head and moulding follow, forceps and version should not be tried.

The mortality of forceps and version under the conditions of modern practice is given by Dobbin, based upon the study of the first 1,000 patients delivered in the Obstetrical Department of the Johns Hopkins Hospital.[1] In cases in which the diagonal conjugate measures 10 centimetres the patient is prepared for Cesarean section. She is anesthetized, placed upon the operating table, and axis-traction forceps carefully applied over the sides of the head. But few well-applied tractions in the axis of the pelvis are made, and, should these fail, immediately Cesarean section should be performed. The fetal mortality in his cases delivered by forceps in deformed pelves was 9.52 per cent. The fetal mortality after version was 26.66 per cent. He had no maternal mortality in uninfected cases from either forceps or version. In our cases the degree of pelvic narrowing was considerably greater than that given by Dobbin, in which he felt justified in preparing his patient for section and in making tentative use only of the forceps.

The results of version in contracted pelves are given by Wolff.[2] His collective mortality in aseptic cases for the mother was 0.5 of 1 per cent, while among the children 24.5 per cent perished as the result of delivery. His cases were carefully selected, and only in the lesser grades of pelvic deformity was version permitted.

In comparison with symphyseotomy Cesarean section shows to good advantage. Here again the difference between cases in which attempts have previously been made to deliver and those in which the operation selected was the only one performed is most significant. Possibly the largest statistics available in later times are those of Pinard.[3] In 100 cases of symphyseotomy 12 women died and 13 children. If the maternal mortality were cut down to the lowest possible point by the selection of cases, the fetal mortality would still be in excess of that of Cesarean section. Induced labor has too high a fetal mortality to be compared with Cesarean section performed under favorable conditions.

[1]Obstetrics, vol. i., No. 7, 1899.

[2]Archiv für Gynäkologie, Band lxii., Heft 3, 1901.

[3]Annales de Gynécologie, August and September, 1899.

In our 3 cases just reported, done for pelvic deformity, the degree of pelvic contraction was sufficient to oblige us to consider seriously Cesarean section. One of these patients had lost a child by forceps delivery, and two had had labors long and difficult, and in the third a high degree of general deformity of the body was present. In each patient the test of labor decided the choice of operation. In no case was it definitely decided to operate at a given time, for such decision we believe to be irrational and shown by experience to be most unsatisfactory. When the head failed to engage after strong pains, section was performed. The question of the prevention of further impregnation was decided in accordance with the expressed wish of the patient. In one case the husband fully consented, in another the husband had abandoned his wife, while the third patient had no husband.

Space does not permit us to discuss the use of Walcher's position and other methods for securing moulding and engagement of the head. It is agreed by all that such methods should be faithfully employed before resorting to any radical method of delivery. When, however, a reasonable time has elapsed with good uterine contractions and such methods fail to secure engagement and moulding, we do not believe that the use of forceps or version can at present be considered justifiable in comparison with Cesarean section in aseptic cases. We regard cases which have been subjected to manipulation by persons whose methods are unknown to us as practically septic, and we should not consider such a patient a fair case for Cesarean section. Such cases and those in which the child is dead demand either embryotomy or the removal of the entire uterus.

Dr. Stricker Coles (closing).—I do not think I have ever seen but one case in which I could say absolutely that the child could not be delivered through the pelvis. That was a case operated upon by Dr. Davis. I think the internal measurements were scarcely two inches. I think I could say without doubt that any living child's head could not be born through that pelvis. In my cases each one had been in labor for some time. The pelves were contracted. I do not put any very great reliance on flat or large pelves. When a woman comes into labor I depend chiefly upon the way the head engages. When the head does not come down and I know it is in good position, and I can feel the head resting on the side of the promontory and symphysis, I do not think it is justifiable to attempt to deliver the patient through the pelvis. In flat pelves the child's head comes down and is delivered spontaneously. I had three such deliveries last week. The pelves were small and flat. In one of the cases which I reported the external measurements were a little less than 18 centimetres. Delivery was accomplished without help.

The indications for Cesarean section are best decided when the head fails to enter the pelvis when the uterus is dilated. I think the indication there is where the head will not engage and you can feel a disproportion and know that it is better to

deliver by Cesarean section than to try to engage the head through the pelvis. That was the condition of the case I mentioned in my paper. The head would not come down, but I did not think the disproportion was so great. The forceps was applied under tremendous force, with the result that the anterior vaginal wall was torn up to the symphysis, the posterior torn back into the cervix, and three fingers could be passed into the peritoneal cavity. The woman died on the third day with peritonitis. The woman could have been easily delivered, but the result here was simply frightful. There may not be such a great difference, but when there is a disproportion between the head and the size of the pelvis I believe the operation should be Cesarean in preference to forceps delivery.

I have only one thing to mention in eclampsia. In the case operated on by Dr. Davis, when the woman came into the Maternity she was thought to be dying. She was in deep coma and had had a great many convulsions outside and had a highly contracted pelvis. I was almost prepared for a postmortem section to deliver the child, if possible, alive, but the woman did breathe. She was stimulated, but did not improve much. As soon as the child was removed from the abdomen the woman began to improve. The operation was done without ether or other anesthetic. The woman only moved an arm as the last stitch was being put into the abdominal wall. From that time on respiration and pulse began to improve and the next morning they were about normal. She died, however, five days after the operation, with advanced kidney disease and other complications. The point is, of course, that removal of the child from the abdomen was the beginning of improvement. The woman was in the Maternity for at least two hours before. This case would seem to indicate that the removal of the child was the entire factor in improvement. The other case was moribund when Dr. Davis operated.

Dr. R. C. Norris (closing).—It seems to me that I am standing almost alone among those present in the position I have always taken in this matter. The selection of operation is a matter of individual judgment, and our judgment is based upon our reading and upon our experience; and, while I cannot agree with the modern trend of operating obstetric surgeons which indulges so frequently in Cesarean section, I further believe that the policy of teaching a widening usefulness of this operation will be conducive to great harm at the hands of the men who practise obstetrics throughout the country. Symphyseotomy, axis-traction forceps, with the Walcher posture and version, continue to have some usefulness in minor degrees of pelvic contraction, and the two last, in the hands of the rank and file of the profession, will show better results than Cesarean section performed by the same men.

To discuss the question from the standpoint of pelvic contraction, it is not alone, as Dr. Coles has said, a question of pel-

vic diameter, but the relative size of head to pelvis and what the individual woman is able to accomplish. We must, however, have some measurements which serve to guide us in selecting operative treatment in any individual case. At the Preston Retreat I never think of a Cesarean section in the case of a conjugate of eight or more centimetres and the head judged to be of average size, and I think I am not more skilful with version or forceps than the gentlemen who reported these cases, which means that if they had resorted to the one or the other of these methods in most of the cases the results for the mothers and babies would have been equally good and the possibility of additional offspring would have been preserved for the mothers whose uteri were sacrificed.

Those gentlemen who employ Cesarean section for what I shall call debatable indications should, I think, do hysterotomy and not hysterectomy. They have no right to deprive the woman of future pregnancies that in most of the cases would terminate successfully either spontaneously or certainly by resorting to the induction of labor at *the proper time.*

It is my conviction that Cesarean section should never be done unless the indication is absolute. I have never done one when the conjugate diameter measured above eight centimetres, because I believe, when forceps or version cannot be used, symphyseotomy is to be preferred for these lesser grades of pelvic deformity. It is a question of individual experience, and I can offer you records of many cases with a conjugate diameter of eight centimetres followed by spontaneous labor when the babies have been small. In others when they have been large labor was successfully induced or forceps, version, or symphyseotomy has been successful. With this record of cases at hand I am convinced that, with a conjugate of eight centimetres and a head recognized not to be abnormally large by examination under ether, we are on the safe side in the exclusion of Cesarean section. Dr. Davis' first case gives a baby weighing six pounds nine ounces. In the second case craniotomy was done and Cesarean section for a baby already destroyed. I have been called in such cases and have delivered them by version. If a crushed head cannot be delivered head first, it surely should be possible to deliver after version. We are here for scientific discussion and there is, of course, nothing personal in our criticism. In the sixth case, a breech labor, tissues unrelaxed, and lack of effort on the part of the woman are given as the indications for Cesarean section. Breech labor is often difficult, slow, and tedious, but if allowed to take its course, or after extracting a foot to hasten delivery, there is no need of dragging the head violently through the vagina and vulvar outlet. If the child's mouth is brought to the orifice of the vagina, plenty of time can be taken for a gradual dilatation and the baby will not suffer from asphyxia.

In one of Dr. Coles' cases, with a conjugate of eight centi-

metres, the baby weighed six pounds eight ounces. I have only to say that I have repeatedly delivered such cases by version and would not think of doing a Cesarean section under such circumstances. I am sure that in a similar case I could satisfy myself, after an examination under ether, that the baby's head was not abnormally large. A study of the distance between the sagittal suture and the sacral promontory or the pubic symphysis by careful manual palpation will determine, in most cases, whether the baby's head will pass through safely. Suppose a primigravida is extensively lacerated following a version or forceps. If I were a woman I would much prefer having my vagina torn than my uterus taken out.

The reports to-night would indicate that we shall exclude symphyseotomy as a possible operation for this grade of pelvic contraction. I think not. I will not attempt to discuss at length the value of symphyseotomy in this class of cases, but wish to state my conviction that it is an operation of choice in some cases, and, for some of the cases reported to-night, more justifiable than Cesarean section. The management of these cases is, after all, a matter of individual judgment. You cannot make a man think differently from the teaching of his own experience.

As to the choice of operation—whether the Sänger or Porro—I have said to those gentlemen who would extend the indications for Cesarean section that I think it is their duty not to remove the woman's uterus, and when the contraction is not below eight centimetres they should not sterilize the woman by resecting the tubes. She may in a second pregnancy have her child spontaneously or after a simple obstetric operation. Given, however, a contraction that is absolute, the woman is better off without the possibility of bearing children. When the Cesarean operation is *necessary* she is better off with the uterus out, in order to avoid all puerperal complications and the unfortunate sequelæ of some hysterotomies. Hemorrhage, infection, parietal adhesions, fistulæ, or other complications are avoided. Statistics cannot decide the relative dangers of these two operations. The modern Porro in the hands of selected operators shows a lower mortality—3.7 per cent, Porro; 5.8 per cent, Sänger. If one chooses the Sänger a portion of the tubes should always be excised to sterilize the patient. When Cesarean section is performed for delayed labor due to moderate pelvic contraction, to breech presentation, or to avoid vaginal laceration, then I believe the risk of some of the complications of hysterotomy should be taken and the woman should not be rendered sterile.

As to the treatment of placenta previa by Cesarean section, the mortality of central implantation of the placenta, since the introduction of asepsis, is not greater than 25 per cent. The infant mortality is 65 per cent. Hysterectomy for central placenta previa has been done eight times, and the mortality of these cases collected by Zinke was 37.5 per cent for the mother and 25 per cent for the infant. He would exclude two of the

fatal cases because they were exsanguined through severe hemorrhage before operation. Unfortunately just such conditions are usually encountered in central placenta previa. Profuse, unexpected hemorrhage is the rule, and when the patient is first seen she is an unfavorable case for a grave operation, and her severe loss of blood has endangered her child with apnea, which Cesarean section cannot always hope to remove. The value of section for these cases has not been demonstrated, and the condition of both mother and child at the time of operation must be an important factor in the results. Before alarming hemorrhage section, of course, would not be indicated, even should the diagnosis, by a happy chance, have been made. After such a hemorrhage I should prefer rapid delivery per vaginam and the usual treatment for grave loss of blood.

The treatment of grave cases of eclampsia by Cesarean section I have never been able to appreciate. While it is true that after delivery the patient's chances are improved, this improvement is not great enough to risk for it the grave dangers of an abdominal section on a patient almost overwhelmed with poisons. With our present knowledge of this disease and of the statistics of section for these cases, it is my conviction that aggressive elimination is far more important than delivery by the quickest method, regardless of its added dangers. When the accumulated toxins have so overwhelmed the patient and her nerve centres that no response is obtained from the usual medical treatment, violent attempts at delivery by Cesarean section will not and cannot avail. I have known craniotomy on a dead child, and the incisions into the cervix as recommended by Dührssen, to fail, as any treatment, having solely for its aim the rapid emptying of the uterus, will fail. I believe with Dr. Baldy the time will come when these "new" indications for Cesarean section will no longer be considered justifiable. The craze for symphyseotomy has gone, and, after a few lives have been lost and more uteri removed unnecessarily by Cesarean section, the best judgment of the profession will return to more conservative measures, and men of ripe experience and keen surgical judgment will continue to place confidence in the skilful use of forceps or version to deliver cases similar to those for which their enthusiasm formerly had selected abdominal section.

Annual Meeting, December 19, 1901.

JOHN C. DA COSTA, M.D., *in the Chair.*

DR. EDWARD P. DAVIS presented a paper on

RETROVERSION AND RETROFLEXION OF THE UTERUS.

THE following cases suggest points of interest and practical value in the treatment of common forms of disease affecting the pelvic organs.

CASE I.—A slender, anemic woman, aged about 40, had been married twenty years, had never had severe illness. Ten years previously gave birth to a male child after a long labor. Had no fever after confinement, but did not nurse the child. Could recall no especial symptoms of pelvic disease until a year before coming under observation. Is habitually constipated. A year ago had what was diagnosticated as severe congestion in the pelvis, which improved under rest and hot douches. A retroversion of the womb was also diagnosticated, and a mass in the pelvis which disappeared under treatment. During the following winter in Berlin she consulted physicians and, declining operation, was treated by pelvic massage. By this she was told that the uterus was made movable and its adhesions broken up. An effort was made to select a pessary which would give the patient comfort, and, after trying five different sorts, she secured in London a rubber ring pessary which gave comfort for a considerable time. Menstruation was regular, without much pain, and the flow much less than some months before coming under observation. She had a fair appetite, became asthmatic upon exertion or apprehension, had no headache, was accustomed to plain food, but habitually deficient in excretion.

On examination the uterus was retroverted and retroflexed. There was no tumor in the pelvis, the pelvic floor was elastic and had not been seriously lacerated, and there was not much tenderness upon examination. The mobility of the uterus was considerably limited. The fundus could be raised to a point near the pelvic brim, but could not be brought into its usual position.

The effort was made to replace the womb by the knee-chest posture and the use of Sims' speculum with moderate pressure, but this effort failed. Examination of the rectum was negative. The patient positively declined any form of operation, but was willing to employ such local treatment as gave prospect of success. She was accordingly treated by tampons of carded wool, by a tonic addressed to her general nutrition, and by regulating the action of the intestine. Her complaint had been of pain in the back and thighs, of a dragging and bearing-down sensation, and general malaise. Under this treatment her symptoms diminished and she was finally able to wear a soft, inflated rubber ring pessary. This was applied with the patient in the knee-chest posture and gave very satisfactory results. The patient left the city and passed from observation. At no time in this case could a prolapse of the ovary or Fallopian tube be detected. The uterus could not be moved freely away from the connective tissue in front of the rectum, and evidently some adhesion had existed or did exist between the bowel and the womb.

CASE II.—A widow, aged 28, gave a family history of paralysis and of removal of the ovaries in her mother for some pelvic disease. Has suffered from frequent catarrhs of the respiratory organs. Is subject to bilious attacks. She had had typhoid fever, had menstruated normally, and was married ten years before coming under observation. She had one normal labor, and after this indulged in violent exertion followed by hemorrhage and backache. Several months before coming under observation she had an abortion produced at two-months gestation, followed by a curetting. Her menstruation was profuse afterward, and she suffered from pain in the left side of the pelvis. She had been subjected during her married life to great anxiety, sorrow, and responsibility, and was excessively nervous and considerably depressed when seen. She enjoyed exercise and felt better after riding or driving. Walking seemed to give pain in the back and abdomen. She had been seen by several physicians and abdominal section had been proposed but had been declined. The patient declined any form of operation requiring incision.

On examination the pelvic floor was relaxed, but had healed properly after labor. The womb was enlarged, retroverted, retroflexed, and slightly prolapsed. Upon the left side of the womb and behind it there was a painful body which was evidently a prolapsed ovary. As the patient was first seen during

the summer, it was impossible to do more than suggest a palliative treatment. She was put in charge of a nurse, taught to use the knee-chest posture and given a general tonic, and urged to take as much rest as possible. In the early autumn she came to Philadelphia for a more thorough treatment. At my request she was seen by Dr. F. X. Dercum, who found her nervous system suffering from the prolonged anxiety and depression which she had undergone. The patient was not especially hysterical, but was sadly in need of rest. She was accordingly placed in a rest cure and the treatment of the pelvic organs and of the nervous system was undertaken at the same time. As the patient would consent to nothing else, she was anesthetized and a thorough examination made of the pelvic organs. The womb was then dilated by bougies, thoroughly curetted, tamponed with gauze, and raised in the pelvis as high as possible. Upon examination under ether it was found that the prolapsed ovary had risen considerably in the pelvis and that the uterus could be manipulated without pressing upon the ovary. The patient made a very satisfactory recovery under the double treatment employed. She gained in weight, the uterus became of normal size, and the prolapsed ovary could not again be felt. She could not wear the ordinary corset and experienced a return of backache and abdominal pain when this was applied. With suitable dress she was in excellent health and enjoyed any form of exertion.

The circumstances surrounding these patients were favorable to any form of treatment. Each could enjoy luxury and each was in an independent position so far as duty to others was concerned. The interesting question arises: "What result could have been obtained for these patients had a more radical treatment been possible?" As it was, each patient was made comfortable and improved greatly in general health and strength.

For the older of these patients ventrosuspension would have been proposed and seemed the most available form of treatment in this case. It would have been necessary to have separated the uterus from the rectum before performing the ventrosuspension. For Case 2, had the patient consented to operation, it is questionable whether any form of suspensory operation would have been indicated. The patient is not likely to remain unmarried, and further pregnancy and childbearing would be seriously embarrassed by any operation which limited the mobility of the uterus. The proposed removal of the Fallopian tube and pro-

lapsed ovary, which had a good deal frightened the patient and made her averse to any operation, was proved to be unnecessary by her recovery without it.

The importance of retroversion and retroflexion of the uterus in producing disability and disease is not at present considered so great as in former years. Nagel[1] found retroversion of the womb the only displacement of the uterus during the period of embryonal development; Ruge found two cases of retroflexion of the uterus in new-born children, Küstner a retroversion of the uterus in an embryo twenty-three centimetres long; and Kölliker and Tschaussow found retroflexion of the uterus in new-born infants.

The occurrence of this condition among adults has been made the subject of statistical study. Schröder[2] examined 411 patients at Königsberg. Of these, 82 were patients in the gynecological polyclinic, 184 in the obstetrical polyclinic, and 145 in the medical clinic. Of these women, 118, or 28.71 per cent, had retroversion and retroflexion; and among these, 76, or 18.49 per cent, had retroversion and 42, or 10.23 per cent, retroflexion.

The interesting question arises: In how many of these patients did the condition of retroversion and retroflexion cause suffering? Of the 411, 303 had no symptoms referred to the pelvic region, and among these there were 79 cases of retroversion and retroflexion of the uterus, or 26.7 per cent. The remaining 108 patients complained of pelvic disorders, and, among these, 39, or 36.11 per cent, had retroversion or retroflexion of the uterus. These statistics indicate that among patients who have no pelvic disorders more than one-fourth have retroversion or retroflexion of the womb, and among those who suffer from pelvic disease more than one-third have retroflexion or retroversion of the womb. Schröder makes a further separation of his cases into patients in whom nothing could be found abnormal, or who are described as absolutely sound, and among these there were 23.66 per cent who had retroversion or retroflexion of the uterus. These statements coincide with those of Carl Schröder in his "Gynecology" and Küstner in "Veit's Handbook of Gynecology."

Those general symptoms most frequently found associated with backward displacement of the uterus pertain largely to the nervous system. They were hysteria, neurasthenia, head-

[1]Archiv für Gynäkologie, Bd. xli., p. 244.

[2]Zeitschrift für Geburtshülfe und Gynäkologie, Bd. xliii., 4, 3, 1901.

ache and backache, headache alone, backache alone, syncope, pain in the stomach, and lumbago. In cases suffering from pelvic disorder and having backward displacement of the uterus, menstruation was increased in most cases and abortion happened in about one-third of those who became pregnant. It has been a common belief that many cases of retroversion and retroflexion of the womb arise from subinvolution after abortion or labor. A closer study of this subject does not bear out this belief, and among Schröder's cases 33⅓ per cent of nulliparous women had retroversion or retroflexion of the womb, while but 25.72 per cent of women who had borne children were found with this condition. It is more than probable that the use of improper clothing during the period of puberty, and lack of proper exercise and development, cause retroversion and retroflexion of the uterus more often than subinvolution after abortion or labor.

Our present knowledge seems to indicate that Schröder's conclusion is essentially correct that retroversion or retroflexion of the uterus, uncomplicated by disease of the tubes and ovaries, does not materially influence the health of the patient and does not in itself demand treatment. In the two cases reported each patient was greatly benefited by treatment addressed to the nervous system in the form of general tonics and rest. There must be no interference with the mobility of the abdominal and pelvic viscera if the patient is to remain in a condition of comfort, and hence the ordinary corset must be discarded and the clothing especially adapted to each case. Where the patient is annoyed by sensations of dragging or heaviness in the pelvis, the assumption of the knee-chest posture will usually bring relief. If the patient has been accustomed to wear a support and believes that such is necessary, that form which exercises least pressure, although it may raise the uterus but slightly, will be found most successful.

Dr. John B. Deaver.—It has been a very great pleasure to me to hear Dr. Davis' paper, and I am particularly glad to hear the statistical part of it. To my mind it is evident, from my experience in examinations of this character, that the majority of women have retrodisplacements of the uterus. I have long since come to the conclusion that that is practically the normal position. It has been my practice not to institute any operative procedure unless, in addition to the retrodisplacement, the fundus was very painful. Where that is the case I do the Alexander operation. This operation I have great confidence in, if it is done carefully and the ligaments secured at

the internal abdominal ring. I have no faith in the operation in which the ligaments are secured at the external abdominal ring, which is quite as likely to fail as to succeed. The operation for exposing the round ligament is similar to that for the radical cure of hernia. In the latter it has always been my object to first expose and separate the sac at the internal abdominal ring, to catch the round ligaments.

It is evident that palliative and general treatment and treatment directed to the nervous system should be employed, as many cases are neurasthenic and can be helped, as Dr. Davis plainly showed in his paper. The operation of ventral suspension and ventral fixation I think out of place in the majority of instances of this variety. I cannot but wonder why gynecologists do such an abominable operation as ventral suspension. I have seen many cases so operated upon and never failed to find, six months afterward, the uterus down in the hollow of the sacrum. I cannot but think it was the moral effect of the operation that accomplished the good.

Dr. J. M. Baldy.—I can only say that I am not in sympathy with Dr. Deaver on any single word he has said, except the statement that the vast majority of retrodisplacements do not give symptoms. The greater experience I have the more convinced I am that the vast majority of uncomplicated retrodisplacements *do not* give symptoms, and when symptoms are present *they are due to the complications.* If we find no complication it is probably not because it is not there, but because we are unable to find it. In many cases in which I have not found it I subsequently had opportunity to see inside the abdomen and would find a complication there which had been overlooked.

Dr. Deaver criticises the ventrosuspension and expresses much faith in the Alexander operation. I cannot conceive of any worse operation. I cannot conceive of any excuse for an Alexander operation. It is irrational, dangerous, weakens the points in the abdominal wall which are already its weakest points, has been the cause of innumerable hernias, and in these cases leaves the patient in a worse condition than before the operation. There are other operations (intra-abdominal) which take the place of the Alexander operation and do the work better and safer, where it is necessary to do it at all. Dr. Davis' cases reported to-night show how often it is altogether unnecessary to operate to relieve these patients. An operation which appeals to me strongly, and which I have done once, is to draw the round ligaments through holes punctured in the broad ligaments and to fasten them behind and to the uterus. It is a simple operation and I cannot see how any harm can come from it. The uterus is put into a perfectly normal position and is simply forced forward by the pulling on the round ligaments. The ventrosuspension has always appeared to me as undesirable, and I am glad to have found a substitute for it. I am surprised that in his operations of ventral suspension Dr. Deaver should find the uterus in the bottom of the pelvis subsequently.

I sometimes do what I call a temporary fixation by passing a silkworm gut into the fundus of the uterus and keeping it there for a week. When the torn and bleeding peritoneal surfaces from torn adhesions are smoothed over, I take out the stitch, knowing that there will be no readhesion of the uterus and no symptoms from the displacement itself will occur. In other words, I am willing that the uterus shall go back into a displaced position, if it chooses—this willingness is only consistent with my belief that uncomplicated displacements rarely cause symptoms, and I believe this the more firmly the longer I live.

Dr. Charles P. Noble.—Unfortunately, I did not hear all of Dr. Davis' paper, but I gather from the last part of it that he took the position that retroversion and retroflexion *per se* as a rule give rise to few or no symptoms. I would not accept that as a general proposition. I am agreed that there are many cases of retroversion or retroflexion that produce no symptoms. I have had too many cases under my own care where women have been absolute invalids from retroversion or retroflexion of the uterus without complicating disease, and where relief has been effected when the malposition was corrected, to accept this. If this proposition were true of all cases of retrodisplacement, all Alexander operations would be useless. Without remembering exactly how many operations I have done—approximately 150—there is no class of patients more appreciative of benefits received from operation than those who have had their round ligaments shortened. That experience is contrary to the proposition of Dr. Davis as upheld by Dr. Baldy, and demonstrates that it must be largely erroneous. I would say that instead of it being the rule that retrodisplacements give no symptoms, rather it is the exception. As to what should be done with retroversions uncomplicated when they produce symptoms, I would say they should be operated upon, and the operation I prefer is the one Dr. Baldy says is so bad. As to hernia, out of my 150 operations I have never had a case of hernia come back to me and none of my friends tell me that my Alexander operations turn up in their hands with hernia, and I think I would hear about them if they did. I believe that if my method, in the operation which Dr. Baldy disapproves of, were adopted the percentage of hernias would be infinitesimal. If the percentage of hernia after a Bassini operation is small, the same should be more true of the Alexander operation, for in fastening the round ligament to Poupart's ligament we do practically a Bassini operation. As a result of a large experience I am quite sure that Dr. Baldy's statements are fallacious so far as good technique is concerned. I do not mean to say there have been no hernias, but that the gentlemen who did the operations did not have a good technique.

My experience in relief from symptoms by operation has been most satisfactory. As to permanent results, I have knowledge of only two cases in which there was relapse: one case I saw myself; another case I was told about, so the percentage is one per

cent or less. When we do a fixation operation I think there is no relapse because the fixation is too firm. In the suspension operation my personal experience is that some four or five per cent will pull away. The suspension operation for movable uteri has always seemed to me too much of an operation for the condition, because there is a definite mortality in the operation. I scarcely know any one who has not had at least one death, and some operators had had a one or two per cent mortality in this operation.

Dr. George Erety Shoemaker.—I would agree with those who hold that uncomplicated retroversion has usually few symptoms which call for operation; but retroversion is very commonly associated with other conditions, as we all know—for instance, with descent, with passive congestion, with prolapse of ovaries, with salpingitis or adhesions—and we commonly encounter a combination of conditions, so that more than one operation is called for. A lacerated perineum calls for repair in a large proportion of cases of retroverted and descending uterus. Whether we should add, in addition to that, an operation to restore the position of the uterus depends upon the gravity of the condition. The number of cases in which I have opened the abdomen to restore an uncomplicated retroverted uterus is very small. I have generally suspected a neurasthenic element and tried to support the uterus by artificial means temporarily without the knowledge of the patient. This determines whether one can, without the influence of suggestion, secure relief of symptoms by support. If that can be done without the patient knowing what the treatment has been, I feel justified in making some effort to restore the malposition. In regard to the Alexander operation, I think it is chiefly fitted to those conditions where there are no adhesions or disease of tubes or ovaries; therefore I cannot find very many cases, which demand any operation at all, where it is indicated. I do the operation; but if there are complicating diseases and it is desirable to get into the abdomen for other reasons, the suspension, if properly done, is in my judgment one of the good methods of restoring the position of the uterus.

Dr. W. A. N. Dorland.—Laying aside the rather more interesting question of the surgery of this condition, there was a remark made by Dr. Davis which impressed me as being strikingly true, namely, that he did not think the larger number of cases of this condition follow parturition either in its premature form or at term. In the large clinic we have at the Pennsylvania Out-Patient Department I have noticed recently a great many single girls and older women, not married, who have come there with a posterior uterine displacement. This was, in the former, a congenital condition, and in the latter the result of pelvic inflammatory disease. I would, therefore, rather put as probably the two most important causes of retrodisplacement of the uterus a lack of uniformity in the development of the uterine

wall, and extrauterine inflammatory action due to tubal and ovarian disease and not originating subsequently to labor.

One word as to the operative treatment. In 1896 I was interested in the reports of labor following ventral suspension, and at that time I gathered all the reported cases up to date, numbering, I believe, about 167 patients. Of these, about 65 per cent showed some complication during gestation or at the time of labor; but as most were fixation operations as performed by Olshausen, in which there was made a scarification of the anterior uterine wall, and not a simple suspension, this could probably be explained. This was also true of the vaginal cases as performed by Dührssen. In the other cases of true suspension as practised by Kelly and others, no complications were noted.

Dr. Charles P. Noble.—I think an important question is: In how many of these cases of backward displacement does the uterus become adherent without disease of the tubes? It has been my experience to see a number of cases in which the uterus became adherent without salpingitis. I remember a patient, a very estimable young woman, in whom the uterus being found adherent, was accused of gonorrhea. I have seen a number of such cases and feel that if the uterus is over backward it is quite possible for it to become adherent without having tubal disease. The process is similar to that which causes fibroid and dermoid tumors to become adherent.

Dr. John C. Da Costa.—I agree with Dr. Baldy that the Alexander is not a good surgical operation. I have seen a goodly number of cases of retroflexion and retroversion, and I would like to ask if Dr. Davis' cases were examined with bladders full or empty. In many cases I have noticed that after the bladder is emptied there will be found a normally placed uterus. I have not had a large experience with the Alexander operation, because I do not consider it a good surgical operation. I have done many ventral suspensions and the results have been uniformly good. Where the uterus is very much retroflexed, particularly without adhesions, I think the examination would show that the posterior wall is always thin. As an average the thickness of the posterior wall is not more than half that of the anterior wall. The circulation has been impaired by the bend. I have seen more than one case operated on whose abdomen was opened afterward for some other reason. In each case I found the uterus freely movable and normal in shape and position, the posterior wall had grown, was well developed, and the uterus was suspended by a peritoneal ligament varying from two to three inches in length. A ligament that would stretch that much in two to six months I do not think would interfere with pregnancy. I have seen women suffering intense agony during menstruation, thin and worn down, and in six months after the operation they were fat and rosy. Ventral fixation I do not do in young women, married or single; but where there is prolapse in an old woman or in a woman past the menopause, I

think ventral fixation is the operation to be employed, especially if combined with amputation of the fundus of the uterus and fixing the stump to the belly wall, thus curing the prolapse.

DR. DEAVER.—I cannot allow what Dr. Baldy said to go on record without some questioning. Dr. Baldy raised a question about Bassini's operation for hernia. It is a well-recognized fact that the most reliable operation is Bassini's, if properly done, and it is assumed that we all do it correctly. Another fact is that inguinal hernias are not common in the female. We know, therefore, that the inguinal canal in the female is not very liable to hernia. It is assumed that no one would do an Alexander operation when there is disease of the tubes. We all know the peculiarities of the muscle and the formation of the conjoined tendon. There is no reason why we cannot close the canal as well in the female as in the male. In closing the inguinal canal I introduce a mattress suture through the internal oblique muscle immediately to the inner side of the internal abdominal ring above the free margin of the muscle, making this part of the canal stronger than we find it. If my friend Baldy will change his technique in the practice of the Alexander operation, I am sure that the next time he speaks he will be more in favor of than against it.

DR. J. M. BALDY.—We all see posteriorly displaced uteri adherent without disease of the appendages. Although no salpingitis is recognized, still originally the adhesions came from the salpingitis which has been cured.

A point which Dr. Davis brought out strikes me as a little unusual—the proportion of retrodisplacements in normal women, which according to Schröder is 1 to 4. Dr. Deaver says that almost all women he examines have retrodisplacements. It is difficult to tell what kind of displacement is meant by these statements. If there is meant a displacement in which the fundus of the uterus is in direct line of the cervix or bent forward on the cervix, and in which the whole uterus sags low down in the pelvis, the condition is not a true retrodisplacement. As I understand retrodisplacements, they are what we technically call retroversion and retroflexion. I cannot conceive of the proportion of women Dr. Deaver or Dr. Schröder speaks of. I would not like to make an assertion in regard to any proportion; but these statements seem to me absurd in view of my experience in examining women. Among the reports from Germany we have been told that one woman in every twenty has a third ovary. I have never seen a third ovary in my whole life. These statements we have to take with a good deal of faith, I am afraid.

Dr. Deaver says he finds more hernias returning in the upper portion than in the lower of the wound. That means, if it means anything, that he sees a considerable number of hernias return after operation even by Bassini's method; and that is the full truth. There are a great many returns of hernia by the best methods. Though the advocates of the various operations in the

past claimed they never had returns, suddenly that particular method has been dropped and another one taken up. Even the Bassini and Halsted operations have returns, and Dr. Deaver unwittingly admitted this fact in the above statement. That he does not see as many hernias in women as in men is probably for the good reason that women are not exposed to the conditions of life that cause hernia. I see a good many hernias in women. I do not think that such a major operation as Bassini's should be done for "such a simple condition" as uncomplicated retrodisplacement. It is an operation which has taken the ingenuity of mankind for many years to secure even the present results. There is little excuse in doing an operation for displacements which risks producing double hernias. As to Dr. Noble's statement of mortality following hysterorrhaphy, I know of no one who is getting a mortality for that operation, because few men operate at all upon the particular class to which he refers and for which he does an Alexander operation—*uncomplicated retrodisplacements.* If I were a woman I should far prefer having the displacement to the hernia.

Dr. Davis (closing)—When we observe the lack of unanimity among operators regarding the so-called suspensory operations upon the uterus, we must respect the wisdom of these patients in declining to be operated upon. The older of these patients seemed a typical case of ventrosuspension. She had passed the age of probable childbearing, and the uterus was so adherent to the connective tissue about the rectum as to interfere with the free emptying of the intestine. There was reason to hope that suspending the uterus would indirectly improve the patient's general health by lessening the tendency to constipation. The pessary was used in her case quite as much to relieve her anxiety as to cause a radical change in the position of the womb. The second patient illustrated the fact that it is not always necessary to remove a prolapsed tube or ovary and that these organs may be replaced with less radical treatment.

These cases were not those of temporary displacement caused by a distended bladder. They were permanent dislocations of the womb. Among working women, and especially in European clinics, we see cases of backward displacement among poor women who work hard and who fasten a considerable mass of clothing about the waist. If such women escape inflammation of the pelvic organs, the backward displacement of the womb frequently causes no symptoms. These are the patients referred to by Schröder and are larger in number than the corresponding class of patients seen in the clinics of this country.

A recent experience illustrates the fact that many of these cases have antedated confinement. A young woman recently passed through her first labor, delivered by forceps with slight laceration which healed under antiseptic precautions. She made a good general recovery. Her mother prevented her from nursing the child, which delayed involution. As soon as the patient

got up she resumed her corsets which she had worn in girlhood. A retroversion is present, but causes no symptoms. The patient herself is well and does not know that she has a retroversion. As the patient was not under observation before pregnancy, no examination was made of the non-pregnant uterus. It is most reasonable to suppose that the retroversion occurred in early life and was confirmed by the delay in involution and the early use of constricting clothing.

Cases which decline operation are often interesting and useful in showing us what can be done without operative procedures. A primary interest attaching to retroversion of the womb is its freedom from or connection with tubal and ovarian disease.

DR. J. M. BALDY presented a paper on

PRIMARY CARCINOMA OF THE UTERINE FUNDUS.

THE old adage that it never rains but it pours holds good with surprising frequency in surgery. Primary carcinoma of the uterine fundus is comparatively rare. In a paper on this subject read before the American Gynecological Society last spring, at the Chicago meeting, I reported a series of twenty-four cases, twenty-one cases operated upon in an experience of sixteen years' practice in gynecology. I have now to report to your society three additional cases which occurred in my practice in the course of three weeks during the present fall.

CASE I.—Mrs. B., aged 54 years, had passed the menopause some six years ago, the function being completed in that no blood was seen after that time until about one year ago. At this time (one year ago) she had vaginal show of blood with symptoms of bearing-down, backache, and pain in abdomen. She had a prolapse of uterus and vagina beginning, and, the symptoms being attributed to this condition, a successful operation was performed and the prolapse relieved. Subsequently she passed into the hands of another physician, and, her symptoms continuing, he curetted the uterus, sent the specimens to the laboratory, and diagnosed cancer of the fundus uteri. He referred her (with the microscopic slides) to me for a confirmation of his diagnosis and an operation. On submitting the slides to the Ayer Laboratory of the Pennsylvania Hospital the disease was pronounced carcinomatous. I removed the uterus and appendages complete by abdominal section, and the patient died promptly from a quick septic infection of the wounds due to the foul, putrid condition of the uterus.

CASE II.—Mrs. B., aged 51 years, married twenty-one years,

and always regular with her menstrual period. Four years ago the uterus had been curetted for too free bleeding, when the menstruation ceased altogether for two years. For the past two years had been seeing a little flow at three or four week intervals, irregular and uncertain as to time and quantity. Had lost a good deal of flesh in the past eight months. During June last her physician sent me from Virginia scrapings from her uterus, saying he suspected cancer. The report from the Ayer Laboratory of the Pennsylvania Hospital was as follows: Sections show irregular growth of large masses of epithelial cells in form of alveoli penetrating into the wall of the uterus. Diagnosis: cancer of uterus. The results of the examination were forwarded by mail to the physician with instructions to send the patient to me at once, in order that the operation could be performed before I left the city for the summer. This fall I received a letter from the physician stating that his patient and he were waiting very anxiously to hear from me. My letter of the summer had miscarried, causing a delay of three months or more. On removal of the uterus it was found that the disease had passed through the fundus at one point and had infiltrated the tissues just over the sacrum. The operation is too late, I fear, to be of permanent benefit.

CASE III.—Mrs. A. was sent me from the interior of Pennsylvania for an opinion as to her condition. She had fully completed the menopause and several years afterward had begun to bleed irregularly and slightly. Indefinite pains in the back and pelvis, with loss of strength and flesh, gradually showed themselves. The cervix had completely disappeared and the fundus was somewhat enlarged. Cancer of the fundus was diagnosed from the symptoms, and a vaginal hysterectomy furnished the specimens, which at the Ayer Laboratory of the Pennsylvania Hospital were pronounced carcinoma.

Three cases, all of which had suffered with a single symptom for a year or more, which in itself makes it inexcusable that an operation was delayed for so long. It is to be remembered that in each of these cases the physician who finally brought the patient to the operating table did so within a few weeks after first seeing the patients. The one exception was the Virginia patient, and the delay there was caused solely by a miscarriage of the United States mails. The doctor did his full duty. But what can be said of the physicians in whose hands these three cases rested for the year prior to their operations? They had

all three passed the menopause, the monthly flow had ceased entirely and completely, and after an interval of years (two at the shortest) a show of blood had occurred from the vagina. The day has passed, gentlemen, when any man practising medicine can justify himself for such a neglect (that is the very mildest term possible under the circumstances). There is little use trying to mince words on this subject, and there is no possibility of our shirking our duty in the premises. Such a history means cancer, and nothing but cancer, in ninety-five cases out of one hundred. The symptom of bleeding after the natural bleeding has ceased is such a grave symptom that no practitioner of medicine of average intelligence should overlook it, and, having once observed it, no possible excuse should be accepted for not acting upon the hint, not in a month, not in a week, but instantly.

In my paper read before the American Gynecological Society and in one read before the American Medical Association last spring I called particular attention to the woful lack of early diagnosis in cases of cancer of the uterus, both of the cervix and of the fundus, and there laid particular stress upon this symptom of irregular, otherwise unexplainable bleeding. At times the symptom is not so plain and its significance so apparent as in these three cases, and yet is sufficiently so to put a careful man on his guard in time to save his patient.

Our hope of saving cancer cases rests largely in the ability of physicians to diagnose the disease early enough for us to operate with success. What of these three cases? One dead from septic infection of the wounds due to advanced cancer which could easily have been diagnosed a year earlier, before the tissue was in such a condition as to be dangerous from the foul discharges. A second one with adherent fundus to sacrum and infiltration through the point of adhesion—practically certain recurrence. A diagnosis which should have been readily made a year before would have found the disease early with no adhesion and no infiltration. A third case in an extremely doubtful condition as to recurrence, when a year before there would have been the greatest chance for a permanent cure.

A year's delay, unnecessary, unjustifiable, in three cases, with a probable result of three deaths. Is it pleasant to contemplate? Is it a credit to our profession that such terribly fatal neglect can exist in this age and in the full knowledge of the importance of these symptoms?

I ask the question advisedly: Where lies the fault? Is it in ourselves as teachers or in the profession at large as pupils? In answer I am free to confess that fault lies in both directions. If self-condemnation will add one atom to our teaching of the future, let us not spare ourselves for failing to impress at all times and in the most vigorous manner the supreme importance of a close and critical study of the bleedings of every woman who passes through our hands professionally, in order that we may the more freely and unhesitatingly condemn such palpable neglect to which these three women have been subjected.

DR. CHARLES P. NOBLE.—I doubt not we are all in hearty accord with the general principles of the paper, and the fact cannot be too strongly emphasized that when a woman after the menopause begins to bleed the case should have adequate investigation. I think it is undoubtedly true that almost invariably the trouble is cancer. It is well, however, to recognize the fact that this is not invariable. All of us have seen cases in which hemorrhage did occur after the menopause without the condition being cancer. I have a patient in the hospital now, 55 years of age. When told by her doctor that she had been bleeding I wrote him that ninety-nine cases out of a hundred were cancer. She was sent down for investigation and the condition was one of polypi. I have seen a number of such cases, also cases in which the hemorrhage was due to endometritis and to fibroid. When the bleeding is not due to cancer it is due to some disease which ought to be properly treated. I think that is the chief point to touch upon. This particular form of cancer we know is the most amenable to treatment, except the superficial epithelioma of the skin.

DR. NICHOLSON.—Those of us who are assistants have the cancer question so drilled into us that we feel it is an old story. In a book just published, purporting to be a physiological account of the different periods of a woman's life, I found in a discussion on the menopause that among the bad symptoms that might arise during this time, hemorrhage is put down as one. Cancer, which causes the hemorrhage, is the last cause given and is mentioned in the same relation as bleeding from heart disease at that period. No caution is given to the women that any bleeding should demand examination by a physician. It is simply stated that cancer occurs more frequently at that time than at any other, and also that hemorrhage was due to endometritis, polyps, also to heart disease, and sometimes occurred in kidney disease. It seemed to me that, coming out in the last few weeks, it was a rather disheartening criticism upon the methods of teaching in the medical profession at present. The teaching is very absolute that when a woman begins to bleed an examination is demanded and in the majority of cases radical

treatment is required. To have a book simply published for the laity, with no more mention made of the probable cause of bleeding, seemed to me very reprehensible.

DR. GEORGE ERETY SHOEMAKER.—I think we cannot too strongly emphasize the point made by Dr. Nicholson, and I believe medical teachers have been at fault in not insisting that recurrence of bleeding after the cessation of the menopause for one year means almost invariably malignant adenoma, if no other form of cancer. Those cases of late bleeding endometritis are often adenoma undergoing the change from the benign to the malignant form, and nothing but microscopic examination will show that change. I can recall but one instance in which a woman bleeding after the menopause did not have cancer. The patient was the mother of a physician. A polypus protruded sufficiently from the labia to cause chafing and consequent bleeding. If malignant disease is present it is often out of sight within the body of the uterus and the cervix may look normal.

DR. JOHN B. DEAVER.—I agree with Dr. Baldy in believing that if more teachers would emphasize the importance of examination upon the development of bleeding much trouble would be averted. My experience with that class of cases is that I do not place too much stock on curettements. In cases with this history I have on more than one occasion taken out an adenocarcinoma where the curettement was negative.

DR. W. A. N. DORLAND.—I think one of the most important points to be taught to medical students is the nature of the hemorrhage at the menopause. I would go one step further than Dr. Shoemaker and say not merely recurrence of the bleeding after the menopause is an important and suggestive symptom, but that an increase of bleeding at the menopause is suggestive and pathologic. As we all know, there are three distinct ways in which the menopause can come on, in all of which there is a decrease in the bleeding, but never increase: that is, there is either the usual dodging period; or the menopause comes on with a slow and gradual decrease in the bleeding; or very rarely there is an abrupt cessation. .

DR. CHARLES P. NOBLE read a paper on

THE TECHNIQUE OF AMPUTATION OF THE CERVIX UTERI.

THE technique of amputation of the cervix has been developed from the original work of Sims and of Schröder. Subsequent operators have varied their methods, but all aim at the same result —to remove more or less of the vaginal portion of the cervix, to secure primary union of the wound, and to secure a patulous external os to the cervical canal. As a result of my own work in this direction I have developed a systematic technique which has given me perfect satisfaction for a number of years.

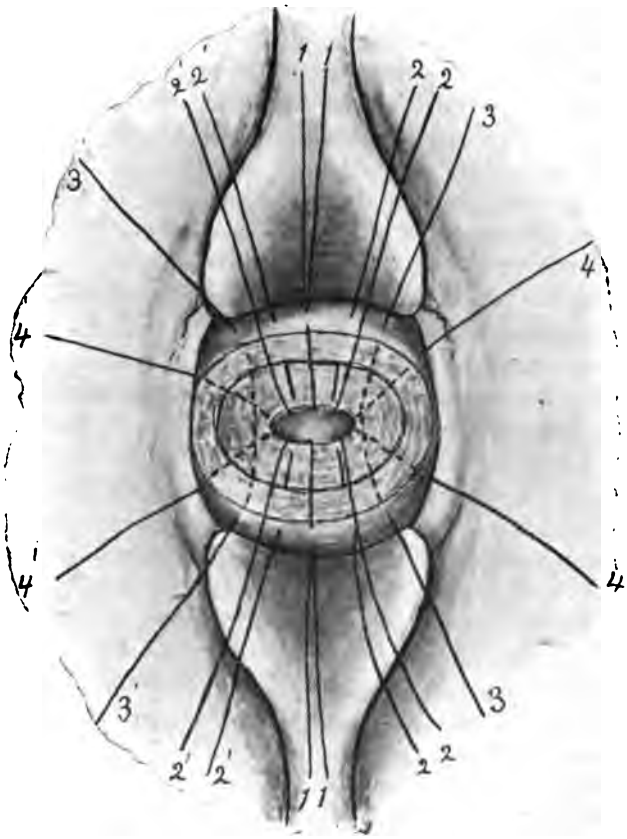
The method of amputating the cervix depends upon the conditions present. If the cervix is but moderately hypertrophied and the amputation is done either for excessive ectropion of the cervical mucous membrane, either without or with laceration of the cervix, or is done for long-standing laceration of the cervix with such degenerative changes as to make the operation of trachelorrhaphy inadvisable, but little tissue is removed. The diseased mucous membrane is cut away with enough of the underlying tissue to secure flaps, but the uterus itself is shortened no more than is necessary to accomplish this end. The method employed is to seize each lip of the cervix with volsella forceps, to split the cervix bilaterally down to sound tissue, and then to cut away first one and then the other lip transversely, removing the diseased mucous membrane and enough of the subjacent tissue to make a flap.

When the cervix is much hypertrophied, and when the operation is done for procidentia of the uterus, it is desirable to remove a considerable portion of the cervix. In these cases the amputation is made as follows: The anterior and posterior lips of the cervix are seized with volsella forceps, the cervix is split bilaterally until the vaginal vault is reached and the bases of the broad ligaments are exposed. In splitting the cervix to this extent the circular artery of the cervix may or may not be cut; if cut, it is ligated. Each lip is amputated in turn. The amputation is begun at the angle formed by splitting the cervix, and the vaginal wall is cut through down to the cervix, and the incision is carried across the cervix to the angle upon the opposite side. By making firm traction with the volsella forceps it is comparatively simple to scalp the cervix with the knife, removing a thin layer of cervical tissue with the vaginal wall and subjacent connective tissue. In this way it is easy to avoid wounding the bladder in front and to avoid opening Douglas' pouch behind. This maneuvre is continued until the point is reached on the anterior and posterior walls opposite the transverse split in the cervix. Each half of the cervix is then amputated, either with the knife or scissors. The cervix is cut squarely across.

The mode of suturing is the same after both methods of amputation. Six sutures are used to make the new os. One suture is used upon each side of the os to fasten the vaginal walls firmly to the cut surface of the cervix. And one suture is introduced from each side of the cervix, not only to fasten the vagina to the lateral walls of the cervix, but also to secure the cervical vessels

which penetrate the cervix along its lateral borders. These two sutures when tied act as ligatures. Occasionally it is desirable to secure the cervical vessels by passing a suture under them from the side before proceeding with the usual sutures.

Of the six sutures which are introduced to secure a patulous os, two are deep sutures and four are superficial. Suture No. 1



Sutures in amputation of cervix uteri.

(see illustration) is introduced through the vaginal wall and through the entire thickness of the cervix, coming out through the cervical canal. It is then reintroduced near the cut margin of the vaginal wall, and emerges near the original point of entry. This suture when tied fastens the flap securely against the central portion of the cervix in the larger amputations, and doubles the flap firmly upon itself in the lesser amputations. The super-

ficial sutures, Nos. 2 and 2′, are introduced through the cut margin of the vaginal mucous membrane and through the cervical mucous membrane. When tied they serve to approximate accurately the vaginal mucous membrane to that of the cervical canal. Corresponding sutures are introduced in the remaining lip of the cervix. Sutures Nos. 3 and 3′ are introduced through the cut surface of the anterior vaginal wall, through the entire thickness of the cervix, and out through the posterior vaginal wall. These sutures when tied firmly fasten the vaginal flaps to the cut end of the cervix. Sutures Nos. 4 and 4′ are introduced through the vaginal wall well out on the lateral border of the cervix. The needle passes through the cervix to the cervical canal, out of which it is withdrawn. It is then passed into the cervical canal and made to penetrate the entire thickness of the cervix and also the vaginal wall, to correspond with its mode of entrance (see illustration). When sutures Nos. 4 and 4′ are tied they act as ligatures to secure all the vessels supplying the lower portion of the cervix. As a rule, when the above sutures are tied the operation is completed. At times one or more superficial sutures are required to secure perfect approximation.

This method of denudation and suturing is thoroughly systematic and has given me such satisfaction that I can confidently recommend it.

Dr. John C. Da Costa.—It is surprising how great minds run in the same channel. It looks as if Dr. Noble has given us the same idea shown in an old book on gynecology by Dr. Goodell. I think, however, I can show him a simpler method than that. In doing amputations I make a square cut across the cervix, and put but one stitch on each side through the cervical canal, which stitch also picks up the mucous membrane on that side. The next stitch picks up the mucous membrane of one side, and is buried in the parenchyma of the neck for a half-inch, comes out and catches up the mucous membrane on the other side. When these stitches are drawn together the mucous membrane moves easily over the cervix. The second stitch draws the mucous membrane over and holds it down to the raw surface of the stump. The third stitch is a simple one going through the mucous membrane. When the operation is finished you have a round cervical canal and the whole stump covered by mucous membrane and held down by two stitches on each side. I have had no trouble with this method, no case in which there has been the slightest complication following the amputation. The chief trouble in doing the operation is to get a small needle through the cervical canal and not take too much of the tissue of the uterus.

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